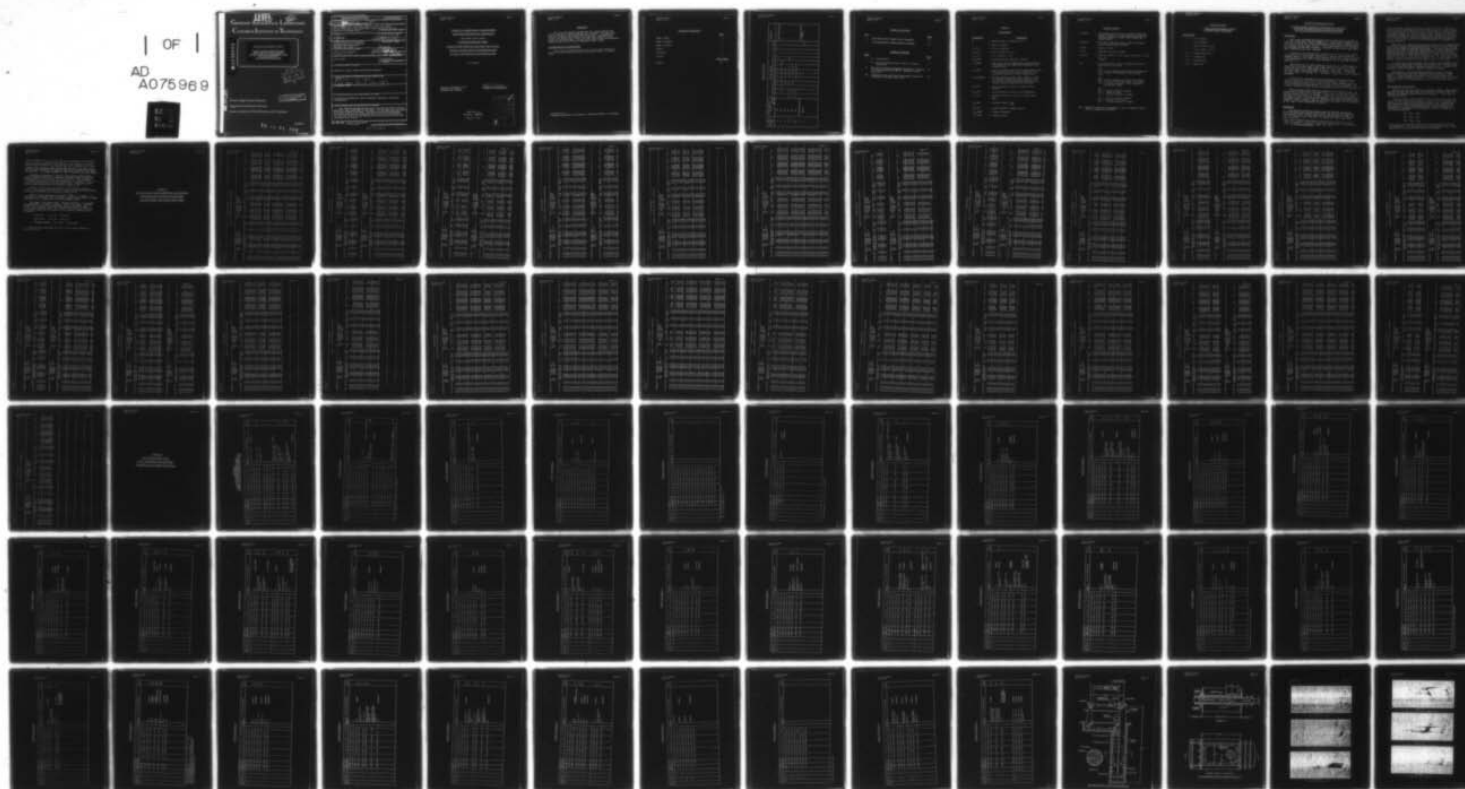
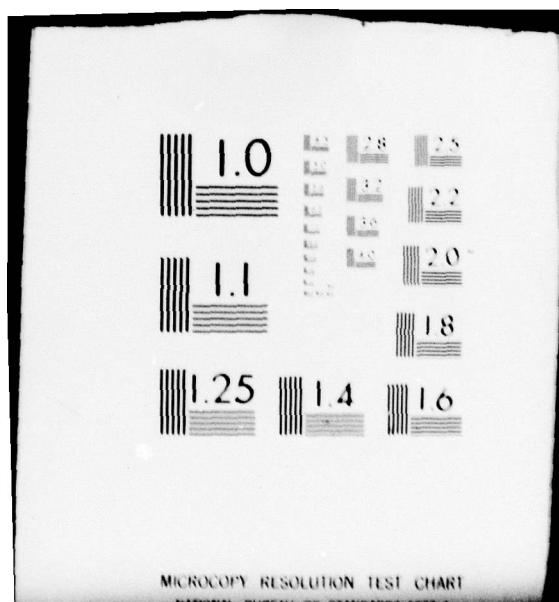


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FLAPPED HYDROFOIL TESTS

WATER TUNNEL TESTS OF THE
NACA 64A-309 FOIL SECTION
FITTED WITH AN ADJUSTABLE FLAP
IN FULLY-WETTED
AND CAVITATING FLOWS

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GRADUATE AERONAUTICAL LABORATORIES
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High Speed Water Tunnel

FLAPPED HYDROFOIL TESTS

WATER TUNNEL TESTS OF THE NACA 64A-309 FOIL
SECTION FITTED WITH AN ADJUSTABLE FLAP
IN FULLY-WETTED AND CAVITATING FLOWS

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Pasadena, California
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ABSTRACT

Lift, drag and pitching moment data for a NACA 64A-309 foil section fitted with a plain sealed flap are presented. The flap hinge axis was located at the three-quarter chord point. The influence of positive and negative flap angles on the data was evaluated in fully wetted and cavitating flows. The data were taken in the two-dimensional working section of the GALCIT* High Speed Water Tunnel.

ADMINISTRATIVE INFORMATION

This work was performed for the U.S. Navy under Contract No. N00014-77-C-0497 during the period 4 December 1978 to 12 January 1979.

*Graduate Aeronautical Laboratories, California Institute of Technology

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TABLE I

A. Nomenclature

<u>Designation</u>	<u>Description</u>
A	= Planform area of hydrofoil, B x C
B	= Span of hydrofoil
C, (LC)	= Chord of hydrofoil
C_D , (CD)	= Drag coefficient, $D/q_\infty A$
C_L , (CL)	= Lift coefficient, $L/q_\infty A$
C_M , (CM)	= Pitching moment coefficient, $M/q_\infty CA$
D, (DRAG)	= Drag force, positive when acting in the direction of flow parallel to the longitudinal centerline of the working section
L, (LIFT)	= Lift force, positive when acting upward and normal to the direction of flow which is parallel to the longitudinal centerline of the working section
M, (MOMENT)	= Pitching moment, positive when tending to rotate the hydrofoil leading edge upward about an axis taken normal to the longitudinal centerline of the working section through the 50% chord point
P_O , (PO)	= Static pressure of water in working section, absolute
P_V , (PV)	= Vapor pressure of water at test temperature
q_∞ , (QO)	= Dynamic pressure of water in working section, $\frac{\rho V_\infty^2}{2}$
R_n , (RN)	= Reynolds number, $\frac{V_\infty C}{\nu}$
V_∞ , (VO)	= Water velocity in working section
W_m , (WM)	= Weight of mercury
W_w , (WW)	= Weight of water

TABLE I (cont'd)

α , (PITCH)	=	Pitch angle; angle of attack of hydrofoil measured between working section longitudinal centerline and hydrofoil chordline, positive when leading edge is rotated upward
δ , (FLAP)	=	Flap angle, measured at the center of the hinge, positive trailing edge downward
ρ , (RHO)	=	Density of water
ν , (NU)	=	Kinematic viscosity of water
σ , (SIGMA)	=	Index of cavitation based on vapor pressure of water, $\frac{P_O - P_V}{q_o}$
CCN	=	Card code number, used to identify the nature of the data point as follows:
CCN		
110	}	Used to designate data taken with model and fairing plate mounted on force balance
120		
130		
CCN		
210	}	Used to designate data taken with model removed from force balance and mounted on opposite sidewall. (Tare readings of fairing disk alone)
220		
230		
CCN		
110	=	Pretest reference readings
120	=	Model test data
130	=	Post test reference readings
210	=	Pretest reference readings
220	=	Fairing disk test data
230	=	Post test reference readings

Note: Equivalent nomenclature designation, used in computer printout Table II, appears in parenthesis

TABLE 1 (Cont'd)

B. Terms and Abbreviations Used in
Cavitation Survey Description

Abbreviation

N = No (cavitation)
Y = Yes (cavitation)
U = Upper surface of foil
L = Lower surface of foil
F. P. = Fairing plate (disk)
L. E. = Leading edge
T. E. = Trailing edge
H. L. = Hinge Line

FLAPPED HYDROFOIL TESTS

WATER TUNNEL TESTS OF THE NACA 64A-309 FOIL SECTION FITTED WITH AN ADJUSTABLE FLAP IN FULLY-WETTED AND CAVITATING FLOWS

Discussion:

This report presents the results of water tunnel tests conducted on a section of the NACA 64A-309 flapped foil. The primary purpose of the tests was to obtain lift, drag and pitching moment during cavitating flows as a function of flap angle and also for the determination of the boundaries for incipient and desinent cavitation. Reynolds number effect tests under these conditions were also conducted.

These tests were conducted in the High Speed Water Tunnel (HSWT) in the GALCIT Hydrodynamics Laboratory* using the two-dimensional working section. This tunnel uses a closed circuit with a choice of either a two-dimensional (6" x 30") or axi-symmetric (14" D) working section. (See Fig. 1.)

The model used for these tests was fabricated of 17-4PH steel and consisted of a six inch span of the NACA 64A-309 foil with a six inch chord and fitted with a flap hinged at the 75% chord line. Flap angle and pitch angle ranges tested are as follows: flap angle $+10^\circ$ through -5° , pitch angle -5° through $+8^\circ$. See Index of Data for a more complete tabulation.

The model was supported on the three-component strain gage balance which is mounted on the side-wall of the working section. See Fig. 2. The opposite sidewall consists of a 1.75 inch (4.44 cm.) thick aluminum plate with a circular Plexiglas viewing window of 7.5 inches (19.05 cm.) diameter. Tip clearance between the model and the viewing window was set at 0.030 inches (0.76mm).

Data recorded during these tests include three component force and moment data together with a cavitation survey which consisted of recording working section pressures of interest. These data are recorded simultaneously for each data point on IBM punched cards using an automatic data acquisition system. These data are reduced to the final coefficient forms defined in Table I together with the cavitation description and are presented in the order of their acquisition in Table II.

Procedures

The hydrofoil model was tested using the following procedure: First, the model after having been fixed for the desired flap angle (δ) was installed in the working section at the selected angle of attack (α). With the sideplate back in position, the tunnel was filled with water.

*For a more complete description of this laboratory see Ward, T. M. "The Hydrodynamic Laboratory at the California Institute of Technology - 1976", J. Fluids Engineering, ASME, Dec. 1976.

After appropriate reference data were recorded, the water velocity was brought to the desired test velocity (V_0) with the working section pressure (P_0) simultaneously adjusted to a value corresponding to a desired index of cavitation number (σ). The force and moment data together with the manometer readings P_0 and V_0 , relating to the conditions in the working section were recorded. Data were recorded for the following values of σ : $\sigma = 2.00, 1.25, 0.80, 0.32, 0.22$ and additionally for incipient and desinent cavitation.

After all of the model test data were recorded with the model mounted on the force balance, the following procedure was used to record the tare forces on the model mounting and fairing disk. The model was removed from the force balance, inverted, and installed in a support fixture on the opposite side plate. A plain flat fairing disk was then secured to the force balance and the model tip was fixed to be within 0.002 inch of the surface of this disk. Tare forces and moments of the fairing disc in the presence of the model were then recorded at all of the model and working section conditions encountered in the earlier portion of the testing.

In some cases, data recording was limited by large unsteady forces on the balance experienced when the cavity extended past 50% chord point or when, at high flap angles, working section pressures in excess of the maximum allowable would be required to suppress cavitation.

Photographs of the model when cavitating for most of the test conditions were taken with some examples shown beginning on Photo Page I. The photo numbers are correlated with Run numbers and Data point (Card) numbers in Table II. The complete series of cavitation photos is issued as a supplement and is on file with the Navy and the Institute.

Data Reduction and Accuracy

Signals from the force balance, manometer readings, model settings, physical constants and other data were recorded on punched cards and reduced using digital computer processing techniques. These data are presented in Table II.

The procedures used to generate the data presented in Table III are as follows: Gravity tare values of model forces and moments were applied as corrections to the data taken during a run. The data were then adjusted to correct for the effect of balance interactions by the application of an inverse calibration matrix. Finally, the data were corrected for the influence of the fairing disk forces by application of the following relations:

$$C_L = C_{L_b} - C_{L_t}^*$$

$$C_D = C_{D_b} - C_{D_t}$$

$$C_M = C_{M_b} - C_{M_t}^*$$

*The signs of the measured fairing disk tare coefficients C_L and C_M and identified as CCN 220 in Table II are reversed when used in these expressions due to the inverted position of the model.

where the values of C_{L_b} , C_{D_b} and C_{M_b} were recorded for the conditions when the model and balance port fairing disk were attached to the force balance and the values of C_{L_t} , C_{D_t} and C_{M_t} were recorded for the same conditions with the balance port fairing disk attached to the force balance and the model installed on the opposite sidewall as described above under "Procedures". No tunnel boundary or other corrections have been applied.

Manometer indications of velocity in the working section exhibit a natural oscillation which has a maximum amplitude change varying from approximately $\pm 5\%$ at 10 ft/sec to $\pm 1\%$ at 60 ft/sec. The oscillation is slow and exhibits periods where no fluctuation is detectable. Data are recorded during periods of zero fluctuations and it is believed that the velocity data presented here are accurate to within $\pm 0.5\%$.

Working section pressure indicators exhibit similar oscillations, however, the maximum excursions are not as large and the data presented here are also believed to be accurate to within $\pm 0.5\%$.

Angle of attack settings are accurate to within ± 0.1 degree. No allowances or corrections have been made to adjust for the effects of model deflections due to applied loads or tunnel boundary effects.

The output of all balance gages, including hysteresis, non linearity and repeatability, are linear to within $\pm 0.25\%$ of full range. The data system used to process and record the output is accurate to within $\pm 0.1\%$ of the indicated value. As a result of the above, the force and moment data presented are believed to be accurate to within the following limits:

Lift force; ± 2.1 lbs (0.95 kg.)

Drag force; ± 0.5 lbs (0.23 kg.)

Pitching moment ± 3.1 lb-in (0.012 m-kg.)

This work was performed for the U.S. Navy under Contract No. N00014-77-C-0497.

TABLE II
RUN DATA AND THREE COMPONENT COEFFICIENTS
CORRECTED FOR BALANCE INTERACTIONS
AND FOR MODEL AND FAIRING DISK TARES

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.5999 DEG F RHO= 1.93588 SLUG/CUFT
 PV= 55.20956 PSF MU= 0.10299E-04 SCFT/SEC
 W= 62.21916 LBS/CUFT MW= 845.43579 LBS/CUFT
 LC= 0.50000 FT A= 0.25000 SCFT

RUN	CN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSF	PITCH DEG	FLAP DEG	QO PSF	QV 10 E 6	SIGMA	LIFT L, LBS	DRAE D, LBS	MOMENT M, FT-LB	CL	CO	CM	L/D
1	110	1	0.0	0.0	0.0	0.0	599.5	1.208	0.35	-0.4	-6.0	-0.00	0.2440	0.0151	-0.0005	16.11
1	120	2	24.89	245.5	0.0	0.0	412.7	1.221	3.31	36.4	2.3	-0.04	0.2376	0.0111	-0.0005	21.32
1	120	3	25.16	2083.2	0.0	0.0	1529.8	1.930	0.38	95.4	3.9	-0.04	0.2494	0.0103	0.0010	21.16
1	120	4	35.76	635.8	0.0	0.0	1545.4	1.540	1.31	92.1	3.5	-0.17	0.2385	0.0091	-0.0005	26.21
1	120	5	39.96	2083.2	0.0	0.0	2412.8	2.424	0.38	149.2	5.6	-0.19	0.2473	0.0092	0.0006	26.74
1	120	6	49.93	462.1	0.0	0.0	2400.3	2.418	0.84	143.8	4.7	-0.38	0.2356	0.0078	-0.0012	30.79
1	120	7	45.80	2083.2	0.0	0.0	3481.5	2.903	0.35	213.2	6.5	0.01	0.2463	0.0075	0.0000	32.67
1	120	8	59.80	1388.2	0.0	0.0	3489.9	2.515	0.58	209.2	7.3	-0.42	0.2328	0.0023	-0.0015	23.74
1	130	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	110	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	110	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	120	12	48.60	5683.0	-4.00	0.0	2284.2	2.359	2.46	-94.1	5.1	-23.83	-0.1646	0.0089	-0.1005	-18.98
2	120	13	48.68	4557.6	-4.00	0.0	2254.0	2.363	2.14	-94.4	6.0	-23.72	-0.1681	0.0104	-0.1002	-16.21
2	120	14	48.83	3085.8	-4.00	0.0	2307.5	2.371	1.31	-101.6	10.3	-30.00	-0.1762	0.0178	-0.1040	-9.83
2	120	15	42.03	2223.5	-4.00	0.0	2326.5	2.380	0.93	-111.2	13.0	-31.72	-0.1511	0.0224	-0.1031	-5.52
2	130	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	110	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	110	18	49.83	4941.6	-2.00	0.0	2403.4	2.419	2.03	17.6	4.5	-15.31	0.0292	0.0074	-0.0510	3.93
3	120	19	49.80	3045.8	-2.00	0.0	2400.3	2.418	1.26	17.2	5.3	-15.20	0.0297	0.0088	-0.0507	3.26
3	120	20	49.77	2223.5	-2.00	0.0	2307.2	2.416	0.90	17.6	5.7	-15.50	0.0293	0.0096	-0.0517	3.09
3	120	21	49.95	2035.0	-2.00	0.0	2405.2	2.420	0.82	16.1	5.1	-15.53	0.0269	0.0101	-0.0520	2.56
3	120	22	49.91	1327.3	-2.00	0.0	2411.2	2.423	0.53	14.2	7.1	-16.60	0.0235	0.0117	-0.0551	2.01
3	120	23	49.80	845.4	-2.00	0.0	2400.3	2.418	0.33	-72.4	15.1	-7.13	-0.1206	0.0251	-0.0235	-4.81
3	120	24	49.85	591.8	-2.00	0.0	2405.3	2.420	0.22	-6.1	17.1	-6.64	-0.0069	0.0285	-0.0154	-0.24
3	120	25	49.54	4566.2	-2.00	0.0	2414.3	2.425	1.87	14.7	4.9	-15.61	0.0244	0.0081	-0.0517	3.00
4	110	26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	110	27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	120	28	49.80	4937.3	-1.00	0.0	2400.3	2.418	2.03	69.6	3.7	-8.81	0.1155	0.0062	-0.0294	12.76
4	120	29	49.84	3085.8	-1.00	0.0	2404.2	2.420	1.26	73.9	4.8	-8.74	0.1229	0.0080	-0.0291	15.41
4	120	30	49.81	2223.5	-1.00	0.0	2401.1	2.418	0.90	76.0	4.8	-8.61	0.1266	0.0081	-0.0287	15.70
4	120	31	49.85	1327.3	-1.00	0.0	2405.0	2.420	0.53	79.2	5.1	-8.47	0.1318	0.0085	-0.0282	15.40
4	120	32	49.85	845.4	-1.00	0.0	2405.0	2.420	0.33	79.8	5.5	-8.22	0.1327	0.0091	-0.0273	14.60
4	120	33	49.74	745.1	-1.00	0.0	2394.0	2.415	0.25	86.5	6.1	-9.14	0.1452	0.0103	-0.0305	14.16
4	120	34	49.81	591.8	-1.00	0.0	2401.5	2.418	0.22	-2.7	14.8	-3.49	-0.0045	0.0247	-0.0116	-0.13
4	120	35	49.81	1692.6	-1.00	0.0	2401.5	2.418	0.68	77.6	5.1	-8.40	0.1256	0.0085	-0.0280	15.17
5	110	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	110	37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	120	38	49.77	4937.3	0.0	0.0	2398.0	2.416	2.04	130.5	3.7	-1.88	0.2177	0.0063	-0.0063	34.81

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.5959 DEG F
PV= 55.2056 PSF
WM= 62.21916 LBS/CUFT
LC= 0.50000 FT
PHC= 1.93588 SLUG/CUFT
NU= 0.10259E-04 SCFT/SEC
WM= 845.35979 LBS/CUFT
A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	PN 10 E 6	SIGMA	LIFT L, LBS	EPAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
5	120	39	49.83	3085.8	0.0	0.0	2403.4	2.419	1.26	136.1	4.6	-1.40	0.2265	0.0077	-0.0047	25.53
5	120	40	49.80	2223.5	0.0	0.0	2400.3	2.418	0.50	136.6	4.8	-1.06	0.2309	0.0079	-0.0035	29.15
5	120	41	49.81	1327.3	0.0	0.0	2403.9	2.418	0.53	142.0	5.2	-0.68	0.2365	0.0086	-0.0022	27.33
5	120	42	49.84	845.4	0.0	0.0	2404.2	2.420	0.33	149.7	6.2	-1.64	0.2490	0.0103	-0.0054	24.17
5	120	43	49.84	591.8	0.0	0.0	2404.2	2.420	0.22	72.2	10.5	-8.05	0.1202	0.0175	-0.0268	6.88
5	130	44	0.0	2056.9	0.0	0.0				0.2	0.0	0.02				

CONSTANTS: TEMP= 72.00000 DEG F
PV= 55.55839 PSF
WM= 62.21658 LBS/CUFT
LC= 0.50000 FT
PHC= 1.93580 SLUG/CUFT
NU= 0.10245E-04 SCFT/SEC
WM= 845.35990 LBS/CUFT
A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	PN 10 E 6	SIGMA	LIFT L, LBS	EPAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
6	110	45	0.0	2050.1	1.00	0.0	2397.9	2.429	2.03	158.1	0.2	0.02	0.3304	0.0075	0.0198	44.31
6	120	46	49.77	4920.5	1.00	0.0	2401.2	2.431	1.26	201.0	4.5	5.94	0.3347	0.0082	0.0222	40.91
6	120	47	49.81	3085.8	1.00	0.0	2401.8	2.431	0.50	206.9	5.2	7.25	0.3445	0.0087	0.0242	39.76
6	120	48	49.81	2223.4	1.00	0.0	2398.7	2.430	0.53	216.2	5.8	8.61	0.3605	0.0097	0.0287	37.01
6	120	49	49.78	1327.3	1.00	0.0	2402.6	2.431	0.33	205.3	10.3	3.04	0.3417	0.0171	0.0101	20.00
6	120	50	49.82	845.4	1.00	0.0	2401.0	2.431	0.22	61.0	12.2	-6.42	0.1015	0.0203	-0.0147	5.01
6	120	51	49.81	591.8	1.00	0.0	2397.9	2.429	0.46	219.2	5.7	8.86	0.3657	0.0096	0.0295	38.14
6	120	52	0.0	2050.1	1.00	0.0				0.4	0.0	0.07				
6	120	53	0.0	2050.1	1.00	0.0				0.2	0.0	0.05				
7	110	54	0.0	4927.8	2.00	0.0	2401.8	2.431	2.03	292.9	5.6	15.97	0.4711	0.0093	0.0532	50.47
7	120	55	49.81	3085.7	2.00	0.0	2404.5	2.433	1.26	284.3	6.2	16.71	0.4729	0.0104	0.0556	45.57
7	120	56	49.85	2223.4	2.00	0.0	2401.0	2.431	0.50	286.7	6.5	17.19	0.4776	0.0108	0.0572	44.20
7	120	57	49.81	1327.3	2.00	0.0	2404.5	2.433	0.53	298.5	7.0	17.80	0.4561	0.0116	0.0592	42.90
7	120	58	49.86	845.4	2.00	0.0	2404.1	2.432	0.32	169.9	14.1	3.02	0.2828	0.0267	0.0101	10.59
7	120	59	49.85	591.8	2.00	0.0	2405.7	2.433	0.22	51.2	14.3	1.20	0.1517	0.0237	0.0040	6.90
7	120	60	49.89	1947.8	2.00	0.0	2403.8	2.435	0.79	293.6	6.3	17.76	0.4876	0.0105	0.0590	46.51
7	120	61	0.0	2049.4	2.00	0.0				0.4	0.0	0.09				
8	110	62	0.0	2049.4	2.00	0.0				0.2	0.0	0.05				
8	120	63	0.0	2049.4	2.00	0.0				0.2	0.0	0.05				
8	120	64	49.77	4927.0	4.00	0.0	2397.1	2.429	2.03	398.5	9.2	31.11	0.6650	0.0153	0.1038	43.55
8	120	65	49.78	3085.7	4.00	0.0	2398.7	2.430	1.26	401.7	5.5	32.01	0.6692	0.0153	0.1068	42.23
8	120	66	49.81	2223.4	4.00	0.0	2401.8	2.431	1.26	406.1	10.0	32.87	0.6762	0.0166	0.1095	40.64

THREE COMPONENT

PUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 72.0000 DEG F RHO= 1.93580 SLUG/CUFT
PV= 55.55839 PSF MU= 0.10245E-04 SCFT/SEC
WM= 62.21658 LBS/CUFT AM= 845.39950 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	RN IO E 6	SIGMA	LIFT L, LBS	DRAQ D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
8	120	67	49.79	2223.4	4.00	0.0	2395.5	2.430	0.50	441.5	14.4	35.52	0.7367	0.0240	0.1184	30.65
8	120	68	49.75	4899.1	4.00	0.0	2395.6	2.428	2.02	401.0	9.1	31.45	0.6696	0.0152	0.1050	44.03
8	130	69	0.0	2047.6	4.00	0.0				0.7	0.0	0.09				
9	110	70	0.0	2047.6	6.00	0.0				0.5	-0.1	0.02				
9	120	71	35.61	4927.0	6.00	0.0	1518.9	1.933	3.21	329.3	8.2	29.30	0.8673	0.0216	0.1543	40.13
9	120	72	31.66	4927.0	8.00	0.0	949.9	1.545	5.02	248.7	7.2	23.92	1.0255	0.0296	0.1973	34.60
9	120	73	31.59	4527.0	10.00	0.0	966.0	1.542	5.04	268.5	16.7	27.95	1.1135	0.0774	0.2315	14.39
9	120	74	32.28	4527.0	12.00	0.0	1008.7	1.575	4.83	289.9	35.3	29.54	1.1495	0.1402	0.2342	8.20
9	130	75	0.0	2047.6	12.00	0.0				0.5	-0.0	0.05				

CONSTANTS: TEMP= 72.0000 DEG F RHO= 1.93574 SLUG/CUFT
PV= 56.24142 PSF MU= 0.10219E-04 SCFT/SEC
WM= 62.21466 LBS/CUFT AM= 845.38184 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	RN IO E 6	SIGMA	LIFT L, LBS	DRAQ D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
10	110	76	0.0	2077.9	2.00	0.0	2402.5	2.438	2.04	263.2	0.0	0.02	0.4382	0.0083	0.0452	52.60
10	120	77	45.82	4527.3	2.00	0.0	2402.7	2.437	1.26	265.4	5.0	13.62	0.4450	0.0096	0.0488	47.01
10	120	78	49.80	3095.6	2.00	0.0	2401.7	2.437	0.90	275.2	5.7	14.63	0.4583	0.0100	0.0505	46.03
10	120	79	49.81	2223.4	2.00	0.0	2401.7	2.437	0.53	279.7	6.1	16.10	0.4658	0.0101	0.0536	45.94
10	120	80	49.81	1327.2	2.00	0.0	2403.3	2.438	0.33	53.0	13.7	1.27	0.1549	0.0228	0.0042	6.79
10	130	81	49.83	445.4	2.00	0.0				0.4	0.1	0.05				
11	110	82	0.0	2077.9	2.00	0.0				0.0	0.0	0.04				
11	120	83	0.0	2077.9	2.00	0.0				0.0	0.0	0.04				
11	120	84	49.81	4778.5	2.00	0.0	2401.0	2.437	2.05	268.5	4.8	14.30	0.4474	0.0080	0.0476	55.07
11	120	85	49.78	3085.6	2.00	0.0	2398.6	2.436	1.26	273.9	5.7	15.20	0.4568	0.0087	0.0507	52.49
11	120	86	49.80	2223.4	2.00	0.0	2400.2	2.437	0.50	277.5	5.4	15.85	0.4625	0.0090	0.0528	51.65
11	120	87	49.82	1327.2	2.00	0.0	2402.5	2.438	0.53	291.0	5.6	17.46	0.4844	0.0093	0.0581	52.10
11	120	88	49.77	845.4	2.00	0.0	2397.9	2.435	0.33	211.7	14.5	5.76	0.3532	0.0242	0.0192	14.60
11	120	89	49.81	501.8	2.00	0.0	2401.7	2.437	0.22	53.5	13.9	1.79	0.1565	0.0232	0.0060	6.74
11	130	90	0.0	2077.9	2.00	0.0				0.0	0.1	0.07				
12	110	91	0.0	2077.9	2.00	0.0				0.0	0.0	0.07				
12	120	92	25.02	270.5	0.0	0.0	605.7	1.224	0.35	36.2	1.5	0.07	0.2392	0.0128	0.0010	18.65
12	120	93	25.16	2022.2	0.0	0.0	612.7	1.231	3.31	36.6	1.5	-0.15	0.2388	0.0095	-0.0025	23.52
12	120	94	39.77	635.7	0.0	0.0	1530.5	1.546	0.38	53.0	3.7	0.12	0.2432	0.0097	0.0006	25.07

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 72.20000 DEG F PHC= 1.93574 SLUG/CUFT
PV= 56.34142 PSF NU= 0.10219E-04 SCFT/SEC
WM= 62.21466 LBS/CUFT WA= 845.38184 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO	PSF	PN	SIGMA	LIFT L, LBS	DRAW D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
12	120	95	35.98	2072.0	0.0	0.0	0.0	1546.8	1.956	1.30	92.5	3.2	-0.29	0.2392	0.0083	-0.0015	28.66
12	120	96	49.94	961.2	0.0	0.0	0.0	2413.4	2.443	0.37	148.6	5.3	-0.02	0.2463	0.0098	-0.0001	23.10
12	120	97	49.80	2072.0	0.0	0.0	0.0	2400.2	2.437	0.84	145.7	4.8	-0.36	0.2429	0.0080	-0.0012	30.30
12	120	98	55.82	1393.2	0.0	0.0	0.0	3464.0	2.927	0.39	210.6	7.0	-0.19	0.2432	0.0081	-0.0004	30.10
12	120	99	60.05	2082.2	0.0	0.0	0.0	3485.6	2.938	0.58	207.1	6.9	-0.58	0.2373	0.0079	-0.0013	30.23
12	130	100	C.C	2058.2	0.0	0.0	0.0				0.2	0.1	0.04				
13	110	101	0.0	2038.2	2.00	0.0	0.0				0.0	0.1	0.04				
13	120	102	49.74	4978.5	2.00	0.0	0.0	2394.8	2.434	2.06	261.7	5.0	13.77	0.4372	0.0083	0.0460	52.75
13	120	103	49.77	3085.6	2.00	0.0	0.0	2397.1	2.435	1.26	270.0	5.3	14.84	0.4505	0.0089	0.0125	50.85
13	120	104	49.78	2223.4	2.00	0.0	0.0	2358.6	2.436	0.90	268.5	5.5	15.06	0.4478	0.0092	0.0502	48.76
13	120	105	49.78	1327.2	2.00	0.0	0.0	2358.6	2.436	0.53	276.1	5.5	15.99	0.4604	0.0099	0.0533	46.42
13	120	106	49.77	845.4	2.00	0.0	0.0	2357.1	2.435	0.33	189.0	14.5	3.26	0.3153	0.0242	0.0105	13.02
13	120	107	49.78	591.8	2.00	0.0	0.0	2358.6	2.436	0.22	76.7	13.7	-0.43	0.1280	0.0228	-0.0014	5.61
13	120	108	49.77	1327.2	2.00	0.0	0.0	2397.9	2.435	0.53	276.6	5.6	15.99	0.4614	0.0094	0.0533	49.27
13	120	109	49.77	845.4	2.00	0.0	0.0	2397.5	2.435	0.33	215.1	13.6	5.13	0.3589	0.0224	0.0171	15.84
13	120	110	49.81	591.8	2.00	0.0	0.0	2401.0	2.437	0.22	87.8	13.4	0.68	0.1463	0.0223	0.0023	6.58
13	120	111	C.C	2098.2	2.00	0.0	0.0				-0.2	0.1	0.04				

CONSTANTS: TEMP= 71.59999 DEG F PHC= 1.93588 SLUG/CUFT
PV= 55.20956 PSF NU= 0.10259E-04 SCFT/SEC
WM= 62.21416 LBS/CUFT WA= 845.43579 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO	PSF	PN	SIGMA	LIFT L, LBS	DRAW D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
14	110	112	0.0	2078.1	0.0	5.00	0.0	2401.6	2.418	2.04	0.0	0.0	-0.02	0.5111	0.0095	0.0129	53.93
14	120	113	45.81	4558.5	0.0	5.00	0.0	2401.1	2.418	1.26	306.5	5.7	3.87	0.5188	0.0099	0.0155	52.43
14	120	114	45.81	3085.6	0.0	5.00	0.0	2401.1	2.418	0.90	311.4	5.9	4.77	0.5188	0.0099	0.0155	52.43
14	120	115	49.79	2223.5	0.0	5.00	0.0	2358.6	2.417	0.90	316.2	6.1	5.34	0.5272	0.0102	0.0178	51.93
14	120	116	49.85	1327.3	0.0	5.00	0.0	2405.0	2.420	0.53	319.1	6.1	5.88	0.5307	0.0102	0.0196	51.92
14	120	117	49.84	845.4	0.0	5.00	0.0	2404.2	2.420	0.33	207.8	13.3	-3.58	0.3457	0.0222	-0.0115	15.60
14	120	118	49.78	591.8	0.0	5.00	0.0	2358.8	2.417	0.22	50.5	13.3	-7.55	0.1510	0.0222	-0.0252	6.79
14	120	119	45.84	1664.7	0.0	5.00	0.0	2404.2	2.420	0.67	322.2	5.8	5.86	0.5360	0.0096	0.0195	55.91
14	130	120	0.0	2078.1	0.0	5.00	0.0				0.0	0.0	-0.05				
15	110	121	0.0	2078.1	2.00	5.00	0.0				-0.2	0.0	-0.02				
15	120	122	45.76	4558.5	2.00	5.00	0.0	2396.5	2.416	2.05	443.3	8.9	21.81	0.7400	0.0145	0.0728	49.58

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

GALCIT REPORT
HSWT-1131

CONSTANTS: TEMP= 71.59999 DEG F PHO= 1.93588 SLUG/CUFT
PV= 55.20556 PSF NU= 0.10299E-04 SQFT/SEC
WM= 62.21916 LBS/CUFT WM= 845.43579 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SQFT

RUN	CN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QC PSF	FN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/U
15	120	123	49.81	3085.8	2.00	5.00	2401.1	2.418	1.26	446.2	9.1	22.90	0.7433	0.0151	0.0762	49.25
15	120	124	49.93	2223.5	2.00	5.00	2412.8	2.424	0.90	444.4	12.7	23.99	0.7368	0.0211	0.0795	34.83
15	120	125	49.82	1321.2	2.00	5.00	2402.7	2.419	0.53	384.5	22.3	10.16	0.6402	0.0372	0.0331	17.22
15	120	126	49.81	845.4	2.00	5.00	2401.1	2.418	0.33	230.2	19.6	5.81	0.3835	0.0327	0.0194	11.72
15	120	127	49.86	591.8	2.00	5.00	2406.6	2.421	0.22	125.7	16.9	1.23	0.2689	0.0280	0.0041	7.45
15	120	128	49.88	3517.9	2.00	5.00	2406.1	2.422	1.44	450.2	9.2	23.03	0.7477	0.0153	0.0765	48.92
15	130	129	0.0	2076.1	2.00	5.00				0.2	0.1	0.00				
16	110	130	0.0	2077.2	3.00	5.00				-0.2	0.0	-0.02				
16	120	131	49.77	4957.6	3.00	5.00	2358.0	2.416	2.04	458.6	11.4	29.62	0.8316	0.0190	0.0938	43.78
16	120	132	49.81	3934.7	3.00	5.00	2401.1	2.418	1.62	503.5	11.6	30.50	0.8395	0.0193	0.1016	43.47
16	120	133	49.81	3085.8	3.00	5.00	2401.1	2.418	1.26	508.1	12.7	32.09	0.8464	0.0212	0.1095	35.54
16	120	134	49.83	2391.7	3.00	5.00	2403.4	2.419	0.57	569.2	19.9	32.74	0.9473	0.0330	0.1090	28.67
16	120	135	49.85	4957.6	3.00	5.00	2405.8	2.420	2.04	502.5	11.5	29.96	0.8355	0.0192	0.0996	43.57
16	130	136	0.0	2077.2	3.00	5.00				0.2	0.1	0.00				
17	110	137	0.0	2077.2	1.00	5.00				0.0	0.0	-0.00				
17	120	138	49.79	4957.6	1.00	5.00	2398.6	2.417	2.04	311.6	5.4	4.06	0.5194	0.0089	0.0135	58.22
17	120	139	49.82	3085.8	1.00	5.00	2402.7	2.419	1.26	314.4	6.0	4.91	0.5235	0.0100	0.0164	52.53
17	120	140	49.84	2223.5	1.00	5.00	2404.2	2.420	0.50	319.3	6.2	5.50	0.5312	0.0103	0.0183	51.63
17	120	141	49.77	1345.1	1.00	5.00	2397.2	2.416	0.54	320.0	6.3	6.02	0.5339	0.0105	0.0201	50.87
17	120	142	49.80	1327.3	1.00	5.00	2400.3	2.418	0.53	325.6	6.1	6.11	0.5425	0.0102	0.0204	52.99
17	120	143	49.85	845.4	1.00	5.00	2405.0	2.420	0.33	210.5	13.3	-3.33	0.3500	0.0221	-0.0111	-15.86
17	120	144	49.79	591.8	1.00	5.00	2398.6	2.417	0.22	84.1	13.5	-7.73	0.1402	0.0226	-0.0258	6.21
17	120	145	49.89	1538.7	1.00	5.00	2405.7	2.422	0.62	328.6	5.7	6.09	0.5455	0.0094	0.0202	58.01
17	130	146	0.0	2077.2	1.00	5.00				0.4	0.1	-0.02				

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.79999 DEG F PRC= 1.93584 SLUG/CUFT
PV= 55.58395 PSF NU= 0.10272E-04 SCFT/SEC
WM= 62.21788 LBS/CUFT MW= 845.41772 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SQFT

PUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG.	FLAP DEG.	QC PSF	RN 10 E 6	SIGMA	LIFT L, LBS	DRAW C, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
18	110	147	0.0	2078.9	-1.00	5.00	2358.7	2.423	2.04	0.2	-0.1	0.00	0.4099	0.0079	-0.0126	52.04
18	120	148	49.78	4958.4	-1.00	5.00	2401.1	2.424	1.26	245.8	4.7	-3.78	0.4142	0.0090	-0.0101	56.93
18	120	149	49.81	3085.8	-1.00	5.00	2401.1	2.424	0.90	248.7	5.4	-3.04	0.4187	0.0091	-0.0081	46.07
18	120	150	49.81	2223.4	-1.00	5.00	2395.5	2.424	0.56	251.3	5.5	-2.61	0.4235	0.0092	-0.0072	46.10
18	120	151	49.79	1396.6	-1.00	5.00	2358.7	2.423	0.53	254.0	5.5	-2.06	0.4266	0.0092	-0.0065	46.42
18	120	152	45.78	1327.3	-1.00	5.00	2402.3	2.424	0.33	255.8	5.5	-8.47	0.3238	0.0182	-0.0282	17.77
18	120	153	49.80	845.4	-1.00	5.00	2402.6	2.425	0.22	194.3	10.9	-3.63	-0.0084	0.0251	-0.0121	-0.33
18	120	154	49.82	591.8	-1.00	5.00	2405.7	2.427	0.61	256.9	5.5	-2.20	0.4271	0.0092	-0.0072	46.66
18	120	155	49.85	1515.0	-1.00	5.00	2405.7	2.427	0.61	256.9	5.5	-2.20	0.4271	0.0092	-0.0072	46.66
18	130	156	0.0	2078.9	-1.00	5.00	2358.7	2.423	2.04	0.2	-0.1	0.00	0.4099	0.0079	-0.0126	52.04
18	130	157	0.0	2078.9	-1.00	5.00	2358.7	2.423	2.04	0.2	-0.1	0.00	0.4099	0.0079	-0.0126	52.04
18	130	158	49.79	4558.4	-2.00	5.00	2399.5	2.424	2.04	178.7	4.3	-11.26	0.2980	0.0072	-0.0375	41.60
18	120	159	49.81	3085.8	-2.00	5.00	2401.1	2.424	1.26	180.2	5.1	-10.81	0.3001	0.0084	-0.0360	35.57
18	120	160	45.80	2223.4	-2.00	5.00	2400.3	2.424	0.90	183.0	5.2	-10.54	0.3050	0.0087	-0.0351	35.13
18	120	161	49.81	1327.3	-2.00	5.00	2401.1	2.424	0.53	186.3	5.5	-10.18	0.3103	0.0089	-0.0335	34.77
18	120	162	49.85	1211.5	-2.00	5.00	2405.7	2.427	0.48	188.1	5.4	-10.15	0.3127	0.0089	-0.0338	35.12
18	120	163	49.84	845.4	-2.00	5.00	2404.2	2.426	0.33	166.0	9.3	-14.32	0.2762	0.0154	-0.0476	17.92
18	120	164	49.81	809.9	-2.00	5.00	2401.1	2.424	0.31	156.3	9.6	-14.46	0.2604	0.0160	-0.0482	16.28
18	120	165	45.83	591.8	-2.00	5.00	2403.4	2.426	0.22	5.6	17.1	-4.60	-0.0093	0.0285	-0.0153	-0.33
18	120	166	49.76	514.7	-2.00	5.00	2396.4	2.422	0.36	182.9	8.5	-13.65	0.3052	0.0143	-0.0456	21.40
18	120	167	49.84	1450.7	-2.00	5.00	2405.2	2.426	0.58	188.8	4.9	-10.13	0.3141	0.0082	-0.0337	38.31
18	130	168	0.0	2078.9	-2.00	5.00	2396.9	2.422	2.05	0.4	-0.1	-0.07	0.4150	0.0084	-0.0408	22.68
20	110	169	0.0	2078.9	-3.00	5.00	2358.4	2.422	2.05	113.8	5.0	-18.23	0.1500	0.0084	-0.0408	22.68
20	120	170	49.76	458.4	-3.00	5.00	2399.5	2.424	1.26	117.6	5.7	-17.89	0.1560	0.0095	-0.0596	20.69
20	120	171	49.79	3085.8	-3.00	5.00	2405.2	2.426	0.90	120.5	6.0	-18.00	0.2004	0.0099	-0.0595	20.20
20	120	172	49.84	2223.4	-3.00	5.00	2397.2	2.422	0.63	121.7	6.0	-17.68	0.2031	0.0100	-0.0590	20.23
20	120	173	45.77	1573.3	-3.00	5.00	2403.4	2.426	0.53	122.1	6.3	-17.91	0.2032	0.0106	-0.0596	19.25
20	120	174	45.83	1227.3	-3.00	5.00	2399.5	2.424	0.49	120.3	6.5	-17.97	0.2005	0.0108	-0.0595	18.55
20	120	175	45.79	1230.1	-3.00	5.00	2401.1	2.424	0.33	98.6	11.1	-22.34	0.1643	0.0136	-0.0744	8.85
20	120	176	45.81	845.4	-3.00	5.00	2405.7	2.427	0.22	8.8	19.3	-5.71	-0.0146	0.0321	-0.0190	-0.46
20	120	177	49.85	591.8	-3.00	5.00	2406.5	2.427	0.55	119.9	6.4	-18.31	0.1593	0.0106	-0.0605	18.79
20	120	178	49.86	1372.1	-3.00	5.00	2401.1	2.424	1.61	113.3	5.3	-18.52	0.1987	0.0098	-0.0617	21.39
20	120	179	49.81	3021.9	-3.00	5.00	2401.1	2.424	1.61	113.3	5.3	-18.52	0.1987	0.0098	-0.0617	21.39
20	130	180	0.0	2078.9	-3.00	5.00	2358.9	2.424	2.04	0.4	-0.1	-0.11	0.4150	0.0084	-0.0408	22.68
21	110	181	0.0	2078.9	-4.00	5.00	2401.1	2.424	2.04	0.2	-0.1	-0.09	0.4150	0.0084	-0.0408	22.68
21	120	182	49.81	4552.5	-4.00	5.00	2358.7	2.423	1.26	57.2	5.1	-25.09	0.0953	0.0084	-0.0836	11.29
21	120	183	49.78	3085.8	-4.00	5.00	2358.7	2.423	1.26	58.4	5.9	-25.16	0.0975	0.0098	-0.0835	9.96
21	120	184	45.80	2505.7	-4.00	5.00	2400.3	2.424	1.19	59.0	6.0	-25.43	0.0983	0.0100	-0.0847	9.82

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THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.70999 DEG F RHO= 1.93584 SLUG/CUFT
PV= 55.58395 PSF NU= 0.10272E-04 SQFT/SEC
WM= 62.21788 LBS/CUFT A= 845.41772 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SQFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QC PSF	RN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	PCMENT M, FT-LB	CL	CD	CM	L/D
21	120	185	49.77	2223.4	-4.00	5.00	2358.0	2.423	0.90	59.7	7.1	-25.68	0.096	0.0118	-0.0857	8.42
21	120	186	49.78	1327.3	-4.00	5.00	2398.7	2.423	0.53	48.4	9.3	-27.60	0.0807	0.0155	-0.0921	5.21
21	120	187	49.80	1172.6	-4.00	5.00	2400.3	2.424	0.47	34.6	11.5	-27.01	0.0577	0.0191	-0.0900	3.02
21	120	188	49.87	1315.5	-4.00	5.00	2407.3	2.427	0.52	44.6	9.7	-28.10	0.0742	0.0162	-0.0934	4.53
21	120	189	49.83	5644.0	-4.00	5.00	2403.4	2.426	2.33	55.9	4.5	-25.43	0.0931	0.0076	-0.0846	12.32
21	130	190	0.0	2073.0	-4.00	5.00				0.2	-0.1	-0.13				

CONSTANTS: TEMP= 72.59999 DEG F RHO= 1.93562 SLUG/CUFT
PV= 57.10748 PSF NU= 0.10166E-04 SQFT/SEC
WM= 62.21080 LBS/CUFT A= 845.34570 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SQFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QC PSF	RN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	PCMENT M, FT-LB	CL	CD	CM	L/D
22	110	191	0.0	2083.8	0.0	-5.00	2398.5	2.449	2.05	-0.2	-0.0	0.02	-0.0470	0.0072	-0.0203	-6.51
22	120	192	49.78	4563.9	0.0	-5.00	2355.3	2.449	1.26	-28.2	4.3	-6.09	-0.0503	0.0092	-0.0205	-5.47
22	120	193	49.79	3055.5	0.0	-5.00	2399.3	2.449	0.90	-30.2	5.5	-6.16	-0.0521	0.0098	-0.0205	-5.30
22	120	194	49.79	2223.3	0.0	-5.00	2400.9	2.450	0.53	-31.2	5.9	-6.27	-0.0556	0.0105	-0.0214	-5.29
22	120	195	49.81	1327.2	0.0	-5.00	2405.5	2.452	0.48	-33.4	6.3	-6.43	-0.0546	0.0108	-0.0213	-5.05
22	120	196	49.86	1207.2	0.0	-5.00	2407.9	2.453	0.33	-32.9	6.5	-6.41	-0.1107	0.0115	-0.0243	-9.60
22	120	197	49.88	845.3	0.0	-5.00	2404.8	2.452	0.22	-66.6	6.9	-7.32	-0.0269	0.0202	-0.0018	-1.33
22	120	198	49.85	591.7	0.0	-5.00	2407.1	2.453	1.21	-16.2	12.1	-0.53	-0.0501	0.0092	-0.0206	-5.47
22	120	199	49.87	2977.3	0.0	-5.00				-30.2	5.5	-6.20				
22	130	200	0.0	2083.8	0.0	-5.00				0.0	-0.0	0.05				
23	110	201	0.0	2093.8	1.00	-5.00	2397.0	2.448	2.05	0.0	-0.1	0.05	0.0302	0.0053	0.0018	5.72
23	120	202	49.77	4563.9	1.00	-5.00	2400.1	2.449	1.26	18.1	3.2	0.53	0.0323	0.0070	0.0023	4.63
23	120	203	49.80	3085.5	1.00	-5.00	2400.1	2.449	0.90	19.4	4.2	0.68	0.0326	0.0077	0.0026	4.26
23	120	204	49.80	2223.3	1.00	-5.00	2402.4	2.451	0.53	19.5	4.6	0.77	0.0352	0.0084	0.0031	4.21
23	120	205	49.82	1327.2	1.00	-5.00	2398.5	2.449	0.33	21.2	5.0	0.93	0.0374	0.0086	0.0036	4.34
23	120	206	49.78	845.3	1.00	-5.00	2401.6	2.454	0.25	22.4	5.2	1.07	0.0491	0.0097	0.0011	5.06
23	120	207	49.89	661.1	1.00	-5.00	2409.4	2.454	0.31	29.6	5.8	-2.37	0.0537	0.0125	-0.0075	4.31
23	120	208	49.81	591.7	1.00	-5.00	2411.7	2.455	0.24	32.3	7.5	-2.37	0.0479	0.0100	0.0007	4.78
23	120	209	49.92	439.9	1.00	-5.00	2409.4	2.454	0.31	28.9	6.0	0.22	0.0378	0.0089	0.0035	4.25
23	120	210	49.90	815.8	1.00	-5.00				22.8	5.4	1.07				
23	130	211	0.0	2083.8	1.00	-5.00				0.0	0.0	0.02				
24	110	212	0.0	2083.8	-2.00	-5.00				0.0	0.0	0.02				

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 72.59999 DEG F
PV= 57.10748 PSF
WM= 62.21080 LBS/CUFT
LC= 0.50000 FTSNC= 1.93562 SLLG/CUFT
NU= 0.10166E-04 SCFT/SEC
WM= 845.34570 LBS/CUFT
A= 0.25000 SCFT

RUN	CON CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	RN IO E 6	SIGMA	LIFT L, LBS	DWAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
24	120	213	4563.9	-2.00	-5.00	2402.2	2.451	2.04	-149.4	6.6	-20.77	-0.2487	0.0110	-0.0691	-22.70
24	120	214	4982	-2.00	-5.00	2402.4	2.451	1.66	-152.1	7.2	-21.11	-0.2532	0.0121	-0.0703	-21.01
24	120	215	4982	-2.00	-5.00	2402.3	2.451	1.26	-154.1	5.0	-21.63	-0.2569	0.0150	-0.0721	-17.16
24	120	216	4982	-2.00	-5.00	2402.4	2.451	0.90	-162.9	11.1	-23.49	-0.2712	0.0184	-0.0782	-14.71
24	120	217	4982	-2.00	-5.00	2412.5	2.456	0.53	-245.3	26.0	-10.48	-0.4067	0.0432	-0.0347	-9.42
24	120	218	4563.9	-2.00	-5.00	2399.3	2.449	2.34	-149.8	6.0	-20.55	-0.2491	0.0099	-0.0698	-25.13
24	130	219	0.0	-2.00	-5.00				-0.4	-0.1	-0.00				

CONSTANTS: TEMP= 73.00000 DEG F
PV= 57.87360 PSF
WM= 62.20654 LBS/CUFT
LC= 0.50000 FTPHO= 1.93550 SLLG/CUFT
NU= 0.10113E-04 SCFT/SEC
WM= 845.30981 LBS/CUFT
A= 0.25000 SCFT

RUN	CON CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	RN IO E 6	SIGMA	LIFT L, LBS	DWAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
25	110	220	2084.5	0.0	10.00	2402.3	2.463	2.04	-0.4	0.0	-0.00	0.8382	0.0147	0.0377	-57.06
25	120	221	4982	0.0	10.00	2400.8	2.462	1.26	503.4	8.8	11.32	0.8534	0.0143	0.0421	59.51
25	120	222	4982	0.0	10.00	2355.2	2.462	1.19	512.2	8.4	12.63	0.8620	0.0140	0.0430	61.42
25	120	223	4982	0.0	10.00	2401.5	2.463	0.90	518.5	8.5	13.24	0.8635	0.0149	0.0441	57.96
25	120	224	4982	0.0	10.00	2403.9	2.464	0.53	436.2	18.0	5.20	0.7258	0.0300	0.0173	24.22
25	120	225	4982	0.0	10.00	2402.3	2.463	0.33	241.1	18.8	-2.10	0.4015	0.0313	-0.0070	12.82
25	120	227	4563.9	0.0	10.00	2399.3	2.461	0.22	131.9	16.8	-7.02	0.2200	0.0279	-0.0234	7.83
25	120	228	4982	0.0	10.00	2405.3	2.467	1.25	517.6	8.5	12.95	0.8553	0.0141	0.0430	60.80
25	130	229	0.0	0.0	10.00				0.0	0.2	0.02				
26	110	230	2084.5	1.00	10.00	2401.5	2.463	2.04	0.0	0.1	0.02	0.8961	0.0190	0.0628	47.05
26	120	231	4982	1.00	10.00	2407.8	2.466	1.26	538.0	11.4	18.85	0.8967	0.0187	0.0668	47.88
26	120	232	4982	1.00	10.00	2411.6	2.468	0.95	544.6	11.2	21.11	0.9033	0.0187	0.0700	48.43
26	120	233	4982	1.00	10.00	2408.5	2.466	0.90	623.3	17.3	20.18	1.0352	0.0287	0.0670	36.09
26	120	234	4982	1.00	10.00	2398.4	2.461	1.09	546.8	11.8	22.44	0.9119	0.0196	0.0748	46.53
26	120	235	4982	1.00	10.00	2356.1	2.460	1.16	547.5	11.8	22.30	0.9140	0.0197	0.0745	46.42
26	120	237	4982	1.00	10.00	2406.2	2.465	1.41	548.0	12.0	21.74	0.9110	0.0200	0.0723	45.61
26	130	238	0.0	1.00	10.00				0.2	0.2	0.07				
27	110	239	2084.5	2.00	10.00	2398.4	2.461	2.05	-0.2	0.1	0.07	0.9851	0.0245	0.0937	40.24

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 73.0000 DEG F RHC= 1.9350 SLIC/CUFT
 PV= 57.87300 PSF NU= 0.10113E-04 SCFT/SEC
 WM= 62.20654 LBS/CUFT MW= 845.30981 LBS/CUFT
 LC= 0.50000 FT A= 0.25000 SCFT

RUN	CON	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP CFC	CO PSF	PN IO E 6	SICMA	LIFT L, LBS	CPAC D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/J
27	120	241	49.73	4215.6	2.00	10.00	2352.0	2.459	1.74	586.9	14.8	28.38	0.9811	0.0247	0.0945	39.69
27	120	242	49.78	3085.4	2.00	10.00	2358.4	2.461	1.26	640.0	16.9	33.95	1.0674	0.0282	0.1133	37.68
27	120	243	45.77	5356.5	2.00	10.00	2396.9	2.461	2.23	591.4	15.8	27.98	0.5870	0.0246	0.0934	40.04
27	130	244	0.0	2084.5	2.00	10.00				0.4	0.1	0.07				
28	110	245	0.0	2084.5	-1.00	10.00				0.2	0.1	0.07				
28	120	246	49.79	4564.5	-1.00	10.00	2399.2	2.462	2.05	432.9	7.6	3.30	0.7218	0.0127	0.0110	56.78
28	120	247	49.84	3085.4	-1.00	10.00	2403.5	2.464	1.26	452.8	7.4	4.67	0.7535	0.0124	0.0155	60.85
28	120	248	45.86	2808.1	-1.00	10.00	2405.4	2.465	1.14	449.6	7.4	4.78	0.7477	0.0123	0.0155	60.74
28	120	249	49.87	2223.2	-1.00	10.00	2407.0	2.466	0.53	453.5	7.3	5.07	0.7534	0.0129	0.0165	58.22
28	120	250	49.84	1327.1	-1.00	10.00	2403.5	2.464	0.33	391.0	15.1	-1.06	0.6506	0.0251	-0.0035	25.87
28	120	251	45.83	645.3	-1.00	10.00	2403.1	2.464	0.33	215.7	16.1	-7.09	0.3540	0.0267	-0.0234	13.43
28	120	252	47.81	591.7	-1.00	10.00	2405.8	2.462	0.22	102.7	15.6	-11.93	0.1711	0.0260	-0.0397	4.59
28	120	253	45.83	3025.6	-1.00	10.00	2403.1	2.464	1.24	446.6	7.2	4.66	0.7433	0.0120	0.0155	61.90
28	130	254	0.0	2084.5	-1.00	10.00				0.4	0.1	0.05				
29	110	255	0.0	2075.2	-4.00	10.00				0.5	0.1	0.04				
29	120	256	49.77	4555.2	-4.00	10.00	2396.9	2.461	2.04	237.5	5.8	-19.63	0.3964	0.0096	-0.0655	41.28
29	120	257	49.80	3085.4	-4.00	10.00	2400.0	2.462	1.26	240.8	6.1	-19.18	0.4013	0.0102	-0.0635	39.51
29	120	258	49.86	2554.3	-4.00	10.00	2405.4	2.465	1.05	244.2	6.2	-19.06	0.4060	0.0104	-0.0634	39.17
29	120	259	49.87	2723.2	-4.00	10.00	2407.0	2.466	0.90	247.2	6.6	-19.04	0.4105	0.0110	-0.0633	37.37
29	120	260	49.80	1327.1	-4.00	10.00	2406.0	2.462	0.53	228.8	12.1	-22.86	0.3813	0.0202	-0.0762	18.89
29	120	261	49.77	1242.4	-4.00	10.00	2396.9	2.461	0.50	207.8	12.7	-23.44	0.3447	0.0212	-0.0783	16.39
29	120	262	49.70	2861.7	-4.00	10.00	2395.7	2.457	1.18	243.5	6.0	-19.04	0.4073	0.0100	-0.0637	40.51
29	120	263	45.73	3716.8	-4.00	10.00	2393.8	2.459	1.53	240.4	5.8	-19.36	0.4017	0.0097	-0.0647	41.61
29	130	264	0.0	2075.2	-4.00	10.00				0.2	0.0	-0.04				

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 73.5999 DEG F PHC= 1.93532 SLUG/CUFT
PV= 59.05725 PSF NU= 0.10035E-04 SCF/SEC
WM= 62.20114 LBS/CUFT WM= 845.26172 LPS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CEN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	RN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
30	110	265	0.0	2072.6	-5.00	10.00	2398.3	2.480	2.04	0.0	0.0	-0.00	0.2867	0.0096	-0.0904	29.88
30	120	266	49.78	4951.5	-5.00	10.00	2398.9	2.481	1.26	171.9	5.8	-27.09	0.2940	0.0105	-0.0885	27.88
30	120	267	49.80	3085.2	-5.00	10.00	2403.7	2.483	1.04	176.4	6.3	-26.68	0.2580	0.0106	-0.0893	28.10
30	120	268	49.84	2349.3	-5.00	10.00	2410.7	2.487	1.00	179.1	6.4	-26.54	0.3013	0.0109	-0.0890	27.71
30	120	269	49.91	2458.9	-5.00	10.00	2406.1	2.484	0.90	181.6	6.6	-26.83	0.3034	0.0111	-0.0897	27.25
30	120	270	49.86	2223.0	-5.00	10.00	2407.6	2.485	0.53	182.5	6.7	-26.67	0.2806	0.0128	-0.1056	12.33
30	120	271	49.88	1327.1	-5.00	10.00	2405.3	2.484	1.22	176.2	6.3	-26.93	0.2931	0.0104	-0.0896	28.09
30	120	272	49.86	3004.1	-5.00	10.00	2407.6	2.485	2.03	169.9	5.7	-27.19	0.2824	0.0095	-0.0903	30.03
30	120	273	49.88	4551.5	-5.00	10.00										
30	130	274	0.0	2071.7	-5.00	10.00				0.0	0.0	-0.05				

CONSTANTS: TEMP= 72.20000 DEG F PHC= 1.93574 SLUG/CUFT
PV= 56.24142 PSF NU= 0.10212E-04 SCF/SEC
WM= 62.21466 LBS/CUFT WM= 845.38184 LPS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CEN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	RN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
31	110	275	0.0	2056.8	0.0	2.50	2398.6	2.436	2.03	-0.2	-0.0	-0.02	0.3698	0.0069	0.0029	53.26
31	120	276	49.78	4936.2	0.0	2.50	2401.7	2.437	1.26	221.8	4.2	0.86	0.3759	0.0077	0.0052	48.53
31	120	277	49.81	3065.6	0.0	2.50	2400.2	2.437	0.90	225.7	4.7	1.58	0.3818	0.0091	0.0067	47.27
31	120	278	49.80	2223.4	0.0	2.50	2400.2	2.437	0.53	225.1	4.8	2.01	0.3842	0.0084	0.0082	45.69
31	120	279	49.80	1327.2	0.0	2.50	2407.9	2.435	0.44	230.5	5.0	2.46	0.3909	0.0088	0.0082	44.39
31	120	280	49.77	1121.8	0.0	2.50	2401.0	2.437	0.33	234.3	5.3	-4.19	0.3273	0.0178	-0.0140	18.35
31	120	281	49.81	655.4	0.0	2.50	2403.3	2.439	0.22	156.5	10.7	-8.51	0.1173	0.0199	-0.0283	5.89
31	120	282	49.83	551.8	0.0	2.50	2412.6	2.443	0.49	70.5	12.0	-8.51	0.1173	0.0199	-0.0283	5.89
31	120	283	49.93	1246.1	0.0	2.50				233.6	5.0	2.57	0.3873	0.0094	0.0085	46.30
31	130	284	0.0	2056.8	0.0	2.50				-0.2	0.0	-0.04				
32	110	285	0.0	2055.1	1.00	2.50				-0.4	-0.0	-0.05				
32	120	286	49.79	4534.5	1.00	2.50	2395.4	2.436	2.03	250.8	4.9	9.01	0.4847	0.0082	0.0300	58.86
32	120	287	49.81	3085.6	1.00	2.50	2401.7	2.437	1.26	294.0	5.4	9.84	0.4897	0.0090	0.0328	54.61
32	120	288	49.84	2223.4	1.00	2.50	2404.1	2.439	0.90	298.8	5.5	10.48	0.4972	0.0092	0.0345	53.99
32	120	289	49.87	1327.2	1.00	2.50	2407.2	2.440	0.53	303.5	5.5	11.20	0.5043	0.0092	0.0372	54.71
32	120	290	49.85	845.4	1.00	2.50	2405.6	2.439	0.33	211.0	13.8	0.61	0.3508	0.0225	0.0020	15.29
32	120	291	49.83	591.8	1.00	2.50	2402.3	2.438	0.22	75.1	13.2	-3.10	0.1250	0.0219	-0.0136	5.71

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 72.20000 DEG F
PV= 56.34142 PSF
WM= 62.21466 LBS/CUFT
LC= 0.50000 FT
RHC= 1.93574 SLUG/CUFT
NI= 0.10219E-04 SCFT/SEC
WM= 845.38184 LBS/CUFT
A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VQ, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	RN 10 E 6	SICMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
32	120	292	49.89	1471.0	1.00	2.50	2405.5	2.441	0.59	313.0	5.7	12.35	0.5196	0.0055	0.0410	54.85
32	130	293	0.0	2055.1	1.00	2.50				-0.2	0.0	-0.02				
33	110	294	0.0	2055.1	2.00	2.50				-0.4	-0.0	-0.05				
33	120	295	49.81	4514.5	2.00	2.50	2401.0	2.437	2.03	367.7	6.3	19.94	0.6126	0.0105	0.0631	58.62
33	120	296	49.83	3085.6	2.00	2.50	2403.3	2.438	1.26	378.3	6.6	20.28	0.6296	0.0110	0.0675	57.10
33	120	297	49.83	2221.4	2.00	2.50	2403.3	2.438	0.90	378.1	6.8	20.75	0.6253	0.0114	0.0691	55.39
33	120	298	49.80	1327.2	2.00	2.50	2400.2	2.437	0.53	370.6	16.5	11.82	0.6175	0.0275	0.0394	22.44
33	120	299	49.88	2467.3	2.00	2.50	2406.0	2.441	1.01	380.6	6.9	20.82	0.6322	0.0115	0.0692	55.00
33	130	300	0.0	2055.1	2.00	2.50				-0.2	-0.0	-0.02				
34	110	301	0.0	2055.1	4.00	2.50				-0.2	-0.0	0.02				
34	120	302	49.79	5654.8	4.00	2.50	2359.4	2.436	2.33	482.1	10.8	34.12	0.8036	0.0180	0.1138	44.76
34	120	303	49.81	4532.1	4.00	2.50	2401.7	2.437	1.86	480.8	11.1	34.57	0.8008	0.0185	0.1152	43.26
34	120	304	49.86	3085.6	4.00	2.50	2406.4	2.440	1.26	458.6	13.8	38.18	0.8287	0.0230	0.1265	36.03
34	120	305	49.86	5654.8	4.00	2.50	2406.4	2.440	2.33	480.8	10.9	34.39	0.7992	0.0181	0.1142	44.22
34	130	306	0.0	2055.1	4.00	2.50				0.0	0.0	0.27				
35	110	307	0.0	2053.4	-2.00	2.50				0.0	-0.0	0.05				
35	120	308	49.88	4932.8	-2.00	2.50	2408.0	2.441	2.03	96.1	4.4	-13.69	0.1596	0.0074	-0.0455	21.61
35	120	309	49.90	3085.6	-2.00	2.50	2410.3	2.442	1.26	58.2	5.3	-13.56	0.1630	0.0087	-0.0450	18.70
35	120	310	49.89	2223.4	-2.00	2.50	2408.7	2.441	0.90	100.9	5.4	-13.31	0.1676	0.0090	-0.0442	18.53
35	120	311	49.85	1327.2	-2.00	2.50	2405.6	2.439	0.53	103.6	5.7	-13.13	0.1723	0.0095	-0.0437	18.23
35	120	312	49.89	1257.1	-2.00	2.50	2409.5	2.441	0.50	104.5	5.8	-13.11	0.1735	0.0096	-0.0436	18.09
35	120	313	49.88	555.5	-2.00	2.50	2408.0	2.441	0.33	102.7	6.5	-14.37	0.1706	0.0107	-0.0471	15.50
35	120	314	49.89	551.8	-2.00	2.50	2408.7	2.441	0.22	-4.5	16.7	-4.54	-0.0075	0.0278	-0.0154	-0.27
35	120	315	49.52	1007.7	-2.00	2.50	2411.8	2.443	0.35	59.1	6.3	-13.40	0.1644	0.0104	-0.0445	15.86
35	120	316	49.86	4025.7	-2.00	2.50	2406.4	2.440	1.65	91.4	4.7	-13.65	0.1520	0.0079	-0.0454	19.29
35	130	317	0.0	2053.4	-2.00	2.50				-0.2	-0.0	-0.00				

THREE COMPONENT

PUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 72.50999 DEG F RHC= 1.93562 SLUG/CUFT
PV= 57.10748 PSF NU= 0.10166E-04 SCFT/SEC
WM= 62.21080 LBS/CUFT WA= 845.34570 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	RN 10 E 6	SIGMA	LIFT L, LBS	DRAW D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
36	110	318	0.0	2066.0	-4.00	2.50	2406.3	2.453	2.03	0.2	-0.0	0.05	-0.0418	0.0087	-0.0935	-4.80
36	120	319	49.86	4046.1	-4.00	2.50	2408.6	2.454	1.74	-25.1	5.2	-29.13	-0.0425	0.0053	-0.0931	-4.80
36	120	320	49.89	4254.6	-4.00	2.50	2411.0	2.455	1.26	-25.9	5.6	-29.00	-0.0423	0.0126	-0.0955	-3.36
36	120	321	49.91	3085.5	-4.00	2.50	2408.6	2.454	0.90	-29.3	5.7	-30.03	-0.0486	0.0162	-0.0998	-3.00
36	120	322	49.89	2223.3	-4.00	2.50	2407.1	2.453	1.97	-27.7	5.2	-28.61	-0.0460	0.0087	-0.0951	-5.29
36	120	323	49.87	4001.6	-4.00	2.50	2409.1	2.453	1.97	0.2	-0.1	-0.04	-0.1416	0.0059	-0.1164	-14.45
36	130	324	0.0	2066.0	-4.00	2.50	2409.1	2.453	1.97	0.2	-0.1	0.00	-0.1435	0.0126	-0.1181	-11.38
37	110	325	0.0	2069.4	-5.00	2.50	2347.3	2.422	2.08	-84.2	7.4	-34.65	-0.1521	0.0215	-0.1235	-7.08
37	120	326	49.26	5668.9	-5.00	2.50	2340.3	2.419	0.93	-104.2	16.4	-37.90	-0.1780	0.0281	-0.1296	-6.34
37	120	327	49.25	4949.5	-5.00	2.50	2340.3	2.419	0.93	0.0	-0.1	-0.04	-0.1416	0.0059	-0.1164	-14.45
37	120	328	49.20	3085.5	-5.00	2.50	2340.3	2.419	0.93	-89.1	12.6	-36.15	-0.1521	0.0215	-0.1235	-7.08
37	120	329	49.17	2223.3	-5.00	2.50	2340.3	2.419	0.93	-104.2	16.4	-37.90	-0.1780	0.0281	-0.1296	-6.34
37	130	330	0.0	2069.4	-5.00	2.50	2340.3	2.419	0.93	0.0	-0.1	-0.04	-0.1416	0.0059	-0.1164	-14.45

CONSTANTS: TEMP= 73.00000 DEG F RHC= 1.93550 SLUG/CUFT
PV= 57.81360 PSF NU= 0.10113E-04 SCFT/SEC
WM= 62.20654 LBS/CUFT WA= 845.30581 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	RN 10 E 6	SIGMA	LIFT L, LBS	DRAW D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
38	110	333	0.0	2069.3	0.0	7.50	2402.3	2.463	2.05	-0.4	0.0	-0.05	-0.6839	0.0113	0.0255	60.61
38	120	334	49.82	4572.1	0.0	7.50	2400.8	2.462	1.26	410.7	6.8	7.78	0.6924	0.0114	0.0295	60.71
38	120	335	49.81	3085.4	0.0	7.50	2403.9	2.462	0.90	415.6	6.8	8.84	0.7058	0.0113	0.0322	62.67
38	120	336	49.81	2223.2	0.0	7.50	2405.4	2.465	0.79	423.6	6.7	9.81	0.7043	0.0111	0.0327	63.47
38	120	337	49.84	1565.3	0.0	7.50	2407.8	2.466	0.33	410.4	12.6	5.14	0.6824	0.0210	0.0171	32.49
38	120	338	49.86	1327.1	0.0	7.50	2409.3	2.467	0.22	410.4	16.0	-3.13	0.3574	0.0265	-0.0104	13.47
38	120	339	49.88	845.3	0.0	7.50	2395.3	2.460	0.88	422.5	6.7	-7.49	0.1833	0.0252	-0.0245	7.20
38	120	340	49.90	531.7	0.0	7.50	2395.3	2.460	0.88	422.5	6.7	9.70	0.7062	0.0111	0.0324	63.44
38	120	341	49.75	2171.6	0.0	7.50	2395.3	2.460	0.88	-0.2	0.1	-0.05	-0.6839	0.0113	0.0255	60.61
38	120	342	0.0	2092.1	0.0	7.50	2395.3	2.460	0.88	-0.4	0.1	-0.07	-0.6924	0.0114	0.0295	60.71
39	110	343	0.0	2092.1	1.00	7.50	2407.8	2.466	1.26	460.2	6.7	15.71	0.7685	0.0145	0.0525	53.11
39	120	344	49.75	4972.1	1.00	7.50	2407.8	2.466	1.26	488.9	9.0	19.22	0.8122	0.0149	0.0635	54.61
39	120	345	49.88	3085.4	1.00	7.50	2406.2	2.465	0.50	483.1	8.9	19.67	0.8032	0.0148	0.0654	54.42
39	120	346	49.86	2223.2	1.00	7.50	2406.2	2.465	0.50	483.1	8.9	19.67	0.8032	0.0148	0.0654	54.42

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THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 73.0000 DEG F RHC= 1.93550 SLUC/CUFT
PV= 57.87360 PSF NU= 0.10113E-04 SCFT/SEC
MW= 62.20694 LBS/CUFT WM= 845.30981 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	PN 10 E 6	SICMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
39	120	347	49.83	1866.4	1.00	7.50	2403.1	2.464	0.75	491.4	9.0	20.55	0.8179	0.0150	0.0684	54.41
39	120	348	49.77	1327.1	1.00	7.50	2356.5	2.461	0.53	432.8	17.5	10.08	0.7222	0.0292	0.0336	24.77
39	120	349	49.78	845.3	1.00	7.50	2297.7	2.461	0.33	225.7	18.7	1.40	0.3765	0.0312	0.0047	12.05
39	120	350	49.81	591.7	1.00	7.50	2400.8	2.462	0.22	129.8	16.5	-3.02	0.2163	0.0275	-0.0101	7.88
39	120	351	49.90	2748.9	1.00	7.50	2405.3	2.467	1.12	483.0	8.5	18.38	0.8018	0.0143	0.0610	56.11
39	130	352	0.0	2092.1	1.00	7.50				-0.2	0.1	-0.07				

CONSTANTS: TEMP= 73.20000 DEG F RHC= 1.93544 SLUC/CUFT
PV= 58.26314 PSF NU= 0.10087E-04 SCFT/SEC
MW= 62.20500 LBS/CUFT WM= 845.25370 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	PN 10 E 6	SICMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
40	110	353	0.0	2082.8	2.00	7.50				-0.4	0.1	-0.00				
40	120	354	49.80	4962.7	2.00	7.50	2400.0	2.468	2.04	522.4	7.1	24.99	0.8707	0.0118	0.0833	73.48
40	120	355	49.85	3273.2	2.00	7.50	2404.6	2.471	1.34	526.0	9.7	25.36	0.8750	0.0161	0.0877	54.22
40	120	356	49.79	3085.3	2.00	7.50	2399.2	2.468	1.26	529.9	10.3	26.88	0.8835	0.0171	0.0896	51.50
40	120	357	49.78	2223.1	2.00	7.50	2357.6	2.467	0.50	581.7	23.3	22.56	0.9705	0.0389	0.0752	24.94
40	120	358	49.84	5682.9	2.00	7.50	2403.8	2.470	2.34	520.2	5.8	24.54	0.8657	0.0056	0.0817	90.11
40	130	359	0.0	2082.8	2.00	7.50				0.2	0.1	0.02				
41	110	360	0.0	2082.8	-2.00	7.50				0.2	0.1	0.02				
41	120	361	49.79	4562.7	-2.00	7.50	2399.2	2.473	2.04	279.8	0.4	-8.04	0.4666	0.0007	-0.0268	63.55
41	120	362	49.86	3085.3	-2.00	7.50	2405.4	2.471	1.26	283.8	3.9	-7.30	0.4719	0.0064	-0.0243	73.37
41	120	363	49.92	2223.1	-2.00	7.50	2411.6	2.474	0.50	284.5	5.6	-6.88	0.4719	0.0093	-0.0228	50.51
41	120	364	49.85	1906.1	-2.00	7.50	2404.6	2.471	0.77	284.5	6.2	-6.70	0.4733	0.0102	-0.0223	46.20
41	120	365	49.79	1327.1	-2.00	7.50	2399.2	2.468	0.53	285.5	8.8	-7.38	0.4767	0.0147	-0.0246	32.51
41	120	366	49.86	845.3	-2.00	7.50	2405.4	2.471	0.33	170.8	14.3	-13.62	0.2841	0.0237	-0.0453	11.99
41	120	367	49.94	766.7	-2.00	7.50	2413.2	2.475	0.29	135.1	14.8	-14.60	0.2306	0.0246	-0.0484	9.37
41	120	368	49.83	591.7	-2.00	7.50	2412.4	2.475	0.22	-4.7	19.4	-4.26	-0.0077	0.0321	-0.0141	-0.24
41	120	369	49.83	552.6	-2.00	7.50	2403.1	2.470	0.37	201.7	14.0	-12.94	0.3357	0.0233	-0.0431	14.42
41	120	370	49.90	2053.2	-2.00	7.50	2409.3	2.473	0.83	284.0	5.6	-6.79	0.4715	0.0094	-0.0225	50.39
41	130	371	0.0	2082.8	-2.00	7.50				0.0	0.2	-0.02				
42	110	372	0.0	2076.9	-4.00	7.50				0.2	-0.1	-0.02				
42	120	373	49.78	4256.8	-4.00	7.50	2397.6	2.467	2.04	149.2	0.2	-22.51	0.2491	0.0014	-0.0751	120.20
42	120	374	49.86	3085.3	-4.00	7.50	2406.2	2.472	1.26	149.9	4.4	-22.33	0.2491	0.0073	-0.0743	34.15

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 73.20000 DEG F RHO= 1.93544 SLUG/CUFT
PV= 59.26814 PSF NU= 0.10087E-04 SCFT/SEC
WM= 62.20300 LBS/CUFT MW= 845.29370 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SQFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	PN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
42	120	375	49.87	2223.1	-4.00	7.50	2406.5	2.472	0.90	152.4	6.2	-22.42	0.2532	0.0103	-0.0745	24.64
42	120	376	49.84	1878.2	-4.00	7.50	2403.9	2.470	0.76	152.6	6.8	-22.29	0.2535	0.0113	-0.0742	22.42
42	120	377	49.81	1327.1	-4.00	7.50	2400.7	2.469	0.53	152.5	8.9	-22.63	0.2548	0.0149	-0.0756	17.13
42	120	378	49.87	1551.9	-4.00	7.50	2406.5	2.472	0.79	148.8	6.5	-22.47	0.2473	0.0108	-0.0747	22.82
42	120	379	49.84	4770.0	-4.00	7.50	2403.8	2.470	1.96	147.4	1.1	-22.73	0.2452	0.0018	-0.0758	133.80
42	130	380	0.0	2076.9	-4.00	7.50				0.2	0.0	-0.09				
43	110	381	0.0	2076.9	-4.00	7.50				0.2	0.0	-0.09				
43	120	382	49.78	4556.8	-5.00	7.50	2397.6	2.467	2.04	88.6	0.6	-29.33	0.1477	0.0010	-0.0975	147.65
43	120	383	49.80	3085.3	-5.00	7.50	2400.0	2.468	1.26	87.5	5.9	-29.50	0.1458	0.0081	-0.0982	17.98
43	120	384	49.81	3323.7	-5.00	7.50	2400.7	2.469	1.36	88.2	4.3	-29.65	0.1470	0.0071	-0.0988	20.56
43	120	385	49.82	3085.3	-5.00	7.50	2402.3	2.470	1.26	88.0	5.0	-29.68	0.1466	0.0083	-0.0988	17.60
43	120	386	49.86	2223.1	-5.00	7.50	2406.2	2.472	0.50	87.8	8.3	-30.49	0.1460	0.0138	-0.1014	10.53
43	120	387	49.90	1807.2	-5.00	7.50	2409.3	2.473	0.73	85.3	9.9	-31.06	0.1417	0.0164	-0.1031	8.62
43	120	388	49.94	1327.1	-5.00	7.50	2413.2	2.475	0.53	72.8	14.1	-32.40	0.1206	0.0234	-0.1074	5.16
43	120	389	49.93	1827.7	-5.00	7.50	2412.4	2.475	0.76	85.3	9.2	-30.72	0.1397	0.0152	-0.1015	9.21
43	120	390	49.91	5677.0	-5.00	7.50	2400.7	2.469	2.34	87.1	-0.7	-29.78	0.1452	-0.0011	-0.0992	*****
43	130	391	0.0	2076.9	-5.00	7.50				0.0	0.1	-0.09				

CONSTANTS: TEMP= 71.79900 DEG F RHO= 1.93544 SLUG/CUFT
PV= 55.58355 PSF NU= 0.10272E-04 SCFT/SEC
WM= 62.21783 LBS/CUFT MW= 845.41772 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SQFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	PN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
44	210	392	0.0	2059.4	0.0	7.50				-0.2	0.0	0.02				
44	220	393	49.81	4538.9	0.0	7.50	2401.8	2.425	2.03	-3.7	0.4	-0.03	-0.0054	0.0007	-0.0001	-7.53
44	220	394	49.77	3085.8	0.0	7.50	2398.0	2.423	1.26	-4.0	1.4	0.02	-0.0066	0.0023	0.0001	-2.86
44	220	395	49.84	2223.4	0.0	7.50	2406.5	2.427	0.90	-4.5	1.8	0.02	-0.0075	0.0025	0.0001	-2.55
44	220	396	49.82	1965.6	0.0	7.50	2402.6	2.425	0.79	-4.5	1.9	0.04	-0.0075	0.0032	0.0001	-2.36
44	220	397	49.77	1321.3	0.0	7.50	2397.2	2.422	0.53	-4.7	2.1	0.04	-0.0078	0.0035	0.0001	-2.23
44	220	398	49.76	845.4	0.0	7.50	2396.4	2.422	0.33	-2.7	1.9	-0.01	-0.0045	0.0032	-0.0000	-1.42
44	220	399	49.77	591.8	0.0	7.50	2398.0	2.423	0.22	-2.0	2.5	-0.01	-0.0033	0.0041	-0.0000	-0.80
44	220	400	49.81	2171.0	0.0	7.50	2401.1	2.424	0.28	-4.5	1.7	0.02	-0.0075	0.0029	0.0001	-2.62
44	230	401	0.0	2059.4	0.0	7.50				-0.2	0.1	0.02				
44	210	402	0.0	2059.4	1.00	7.50				-0.2	0.0	-0.00				

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.79959 DEG F PHO= 1.93584 SLUG/CUFT
PV= 55.58395 PSF NU= 0.10272E-04 SCFT/SEC
WM= 62.21788 LBS/CUFT WM= 645.41772 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CON	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	RA 10 E 6	SIGMA	LIFT L, LBS	EPAG DALBS	MOMENT M, FT-LB	CL	CD	CM	L/D
45	220	403	45.83	4538.1	1.00	7.50	2403.4	2.426	2.03	-4.1	0.2	-0.00	-0.0065	C.0003	-0.0000	-21.36
45	220	404	49.86	3045.8	1.00	7.50	2406.5	2.427	1.26	-4.8	1.3	0.02	-0.0081	0.0021	0.0001	-3.77
45	220	405	49.88	2223.4	1.00	7.50	2408.1	2.428	0.90	-5.2	1.7	0.01	-0.0087	C.0023	0.0000	-3.01
45	220	406	49.86	2223.4	1.00	7.50	2406.5	2.427	0.50	-5.4	1.8	0.04	-0.0050	0.0030	0.0001	-2.98
45	220	407	49.89	1327.3	1.00	7.50	2408.8	2.428	0.53	-5.0	2.1	0.04	-0.0083	0.0035	0.0001	-2.40
45	220	408	49.89	845.4	1.00	7.50	2409.6	2.429	0.33	-2.7	1.9	0.02	-0.0045	C.0032	0.0001	-1.38
45	220	409	49.81	591.8	1.00	7.50	2401.8	2.425	0.22	-2.2	2.6	0.02	-0.0036	0.0043	0.0001	-0.84
45	220	410	49.80	2749.3	1.00	7.50	2400.3	2.424	1.12	-4.8	1.4	0.02	-0.0081	0.0024	0.0001	-3.40
45	230	411	0.0	2058.6	1.00	7.50				-0.2	0.0	-0.00				
45	210	412	0.0	2058.6	2.00	7.50				-0.4	0.0	0.02				
46	220	413	45.81	4563.4	2.00	7.50	2401.8	2.425	2.04	-4.3	0.0	-0.03	-0.0072	C.0000	-0.0001	*****
46	220	414	49.79	3274.3	2.00	7.50	2399.5	2.424	1.34	-5.0	1.0	-0.01	-0.0084	0.0017	-0.0000	-4.80
46	220	415	49.77	3045.8	2.00	7.50	2358.0	2.423	1.26	-5.0	1.1	-0.01	-0.0084	0.0018	-0.0000	-4.59
46	220	416	45.80	2223.4	2.00	7.50	2400.3	2.424	0.90	-5.4	1.5	-0.01	-0.0050	C.0025	-0.0000	-3.65
46	220	417	49.81	5683.7	2.00	7.50	2401.8	2.425	2.34	-4.1	-0.5	-0.05	-0.0069	-0.0009	-0.0002	1.55
46	230	418	0.0	2058.6	2.00	7.50				-0.2	0.0	-0.00				
47	210	419	0.0	2058.6	2.00	7.50				-0.2	0.0	-0.00				
47	220	420	49.83	4563.4	2.00	7.50	2403.4	2.426	2.04	-1.8	0.9	-0.03	-0.0030	0.0016	-0.0001	-1.89
47	220	421	45.85	3045.8	2.00	7.50	2405.7	2.427	1.26	-2.5	1.5	-0.00	-0.0042	C.0025	-0.0000	-1.85
47	220	422	49.82	2223.4	2.00	7.50	2402.6	2.425	0.90	-2.9	1.8	0.02	-0.0048	0.0030	0.0001	-1.55
47	220	423	49.85	1506.4	2.00	7.50	2405.0	2.426	0.77	-3.1	1.9	0.02	-0.0051	0.0032	0.0001	-1.57
47	220	424	45.88	1327.3	2.00	7.50	2408.1	2.428	0.53	-3.4	2.2	0.02	-0.0057	C.0036	0.0001	-1.56
47	220	425	49.87	845.4	2.00	7.50	2407.3	2.427	0.33	-2.3	2.3	0.02	-0.0039	0.0038	0.0001	-1.02
47	220	426	45.85	766.8	2.00	7.50	2405.7	2.427	0.30	-1.8	2.0	-0.00	-0.0030	0.0034	-0.0000	-0.88
47	220	427	49.80	591.8	2.00	7.50	2400.3	2.424	0.22	-0.9	2.7	-0.00	-0.0015	C.0044	-0.0000	-0.34
47	220	428	49.81	952.8	2.00	7.50	2401.1	2.424	0.37	-2.7	2.3	0.02	-0.0045	0.0039	0.0001	-1.16
47	230	429	0.0	2058.6	2.00	7.50				-0.4	0.1	-0.00				

TYPE COMPONENT
RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.70000 DEG F RHO= 1.92586 SLUG/CUFT
PV= 55.35677 PSF MU= 0.10285E-04 SCFT/SEC
WM= 62.21E-2 LBS/CUFT WP= 84.542676 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CEN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QC PSF	RN 10 F.	SIGMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	C4	L/D
48	210	430	0.0	2087.4	-4.00	7.50	2405.0	2.423	2.04	-0.2	0.0	-0.00	0.0	0.0007	-0.0002	0.0
48	220	431	49.85	4966.9	-4.00	7.50	2401.9	2.422	1.26	0.0	0.4	-0.07	0.0	0.0009	-0.0001	-0.36
48	220	432	49.81	3085.8	-4.00	7.50	2407.3	2.424	0.50	-0.5	1.9	-0.03	-0.0018	0.0032	-0.0001	-0.53
48	220	433	49.87	2223.5	-4.00	7.50	2408.1	2.425	0.76	-1.1	1.9	-0.03	-0.0021	0.0035	-0.0001	-0.60
48	220	434	45.88	1878.5	-4.00	7.50	2405.0	2.423	0.53	-1.3	2.1	-0.00	-0.0027	0.0037	-0.0000	-0.72
48	220	435	49.85	1327.3	-4.00	7.50	2405.8	2.424	0.38	-1.6	2.2	-0.00	-0.0012	0.0032	-0.0000	-0.37
48	220	436	49.85	972.2	-4.00	7.50	2404.2	2.423	0.79	-0.7	1.9	-0.03	-0.0021	0.0033	-0.0001	-0.63
48	220	437	49.84	1452.1	-4.00	7.50	2402.6	2.422	1.56	0.0	0.5	-0.07	0.0	0.0009	-0.0002	0.0
48	220	438	49.82	4770.7	-4.00	7.50	2401.5	2.422	2.04	-0.2	-0.0	-0.00	0.0	0.0015	0.0004	3.84
48	220	439	0.0	2087.4	-4.00	7.50	2401.9	2.422	1.26	0.0	0.2	-0.09	0.0003	0.0020	-0.0002	0.15
48	220	440	0.0	2087.4	-5.00	7.50	2404.2	2.423	1.26	0.0	1.4	-0.05	0.0	0.0023	-0.0002	0.0
48	220	441	49.81	4966.9	-5.00	7.50	2406.5	2.424	0.50	-0.4	1.8	-0.03	-0.0006	0.0031	-0.0001	-0.19
48	220	442	45.83	3324.2	-5.00	7.50	2405.8	2.424	0.73	-0.5	1.9	-0.03	-0.0009	0.0032	-0.0001	-0.28
48	220	443	49.84	3085.8	-5.00	7.50	2405.0	2.423	0.53	-0.4	2.0	-0.03	-0.0006	0.0033	-0.0001	-0.18
48	220	444	49.85	1807.5	-5.00	7.50	2407.3	2.424	0.43	0.5	1.8	-0.00	0.0009	0.0030	-0.0000	0.30
48	220	445	45.87	1057.4	-5.00	7.50	2405.0	2.423	0.77	-0.5	1.9	-0.05	-0.0009	0.0032	-0.0002	-0.28
48	220	446	49.85	1327.3	-5.00	7.50	2406.5	2.424	2.34	1.3	-0.2	-0.09	0.0021	-0.0004	-0.0003	-5.20
48	220	447	45.87	1057.4	-5.00	7.50	2401.5	2.422	2.04	-0.2	-0.0	-0.00	0.0	0.0015	0.0004	3.84
48	220	448	49.85	1898.0	-5.00	7.50	2404.2	2.423	1.26	0.0	1.4	-0.05	0.0	0.0023	-0.0002	0.0
48	220	449	49.86	5677.9	-5.00	7.50	2406.5	2.424	2.34	1.3	-0.2	-0.09	0.0021	-0.0004	-0.0003	-5.20
48	220	450	0.0	2087.4	-5.00	7.50	2401.9	2.422	1.26	0.0	0.2	-0.09	0.0003	0.0020	-0.0002	0.15

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.20000 DEG F PHO= 1.93596 SLUG/CUFT
PV= 54.46078 PSF AU= 0.10353E-C4 SCFT/SEC
WM= 62.22174 LBS/CUFT WM= 845.47192 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SOFT

RUN	CCN	CARD	VELOCITY VC, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DFG	CO PSF	RN 10 E 6	SIGMA	LIFT L, LBS	DRAQ D, LBS	MCENT M, FT-LB	CL	CD	CM	L/D
50	210	451	0.0	2078.2	0.0	10.00	2397.3	2.403	2.05	0.0	0.0	0.02	-0.0078	C.0004	-0.000C	-19.35
50	220	452	49.77	4957.8	0.0	10.00	2401.2	2.405	1.26	-5.4	0.2	-0.01	-0.0050	0.0023	0.0001	-3.90
50	220	453	49.81	3086.0	0.0	10.00	2401.2	2.405	1.19	-5.4	1.4	0.02	-0.0050	0.0023	0.000C	-4.03
50	220	454	49.81	2066.7	0.0	10.00	2401.2	2.405	1.19	-5.4	1.4	0.01	-0.0053	0.0023	0.000C	-4.03
50	220	455	49.84	2223.6	0.0	10.00	2404.3	2.407	C.90	-5.7	1.8	0.01	-0.0056	0.0029	0.000C	-3.26
50	220	456	49.86	1327.4	0.0	10.00	2406.7	2.408	C.53	-5.6	2.1	0.04	-0.0084	0.0036	0.0001	-2.35
50	220	457	49.84	845.5	0.0	10.00	2404.3	2.407	0.33	-2.9	2.1	-0.01	-0.0048	C.0035	-0.000C	-1.38
50	220	458	49.80	591.8	0.0	10.00	2400.4	2.405	0.22	-2.2	2.6	-0.01	-0.0036	0.0043	-0.000C	-0.84
50	220	459	49.81	2623.5	0.0	10.00	2402.0	2.406	1.07	-2.6	1.4	-0.01	-0.0053	0.0027	-0.000C	-3.53
50	230	460	0.0	2078.2	0.0	10.00				0.0	-0.0	0.00				
51	210	461	0.0	2078.2	1.00	10.00				0.0	-0.0	0.00				
51	220	462	49.85	4957.8	1.00	10.00	2405.1	2.407	2.04	-5.0	0.1	-0.01	-0.0084	C.0002	-0.000C	-34.27
51	220	463	49.83	3086.0	1.00	10.00	2403.6	2.406	1.26	-5.7	1.2	0.01	-0.0096	0.0021	0.000C	-4.64
51	220	464	49.85	2353.8	1.00	10.00	2405.5	2.408	C.56	-6.1	1.7	0.04	-0.0102	C.0028	0.0001	-3.56
51	220	465	49.85	2223.6	1.00	10.00	2405.5	2.408	0.90	-6.3	1.8	0.01	-0.0104	C.0029	0.000C	-3.57
51	220	466	49.81	1327.4	1.00	10.00	2402.0	2.406	0.53	-5.0	2.2	0.04	-0.0084	0.0036	0.0001	-2.30
51	220	467	49.79	2664.9	1.00	10.00	2399.7	2.405	1.09	-5.9	1.6	0.01	-0.0059	0.0026	0.000C	-3.77
51	220	468	49.81	2828.1	1.00	10.00	2401.2	2.405	1.16	-5.7	1.4	0.01	-0.0096	0.0024	0.000C	-4.02
51	220	469	49.83	3452.9	1.00	10.00	2403.6	2.406	1.41	-5.7	1.1	0.02	-0.0056	0.0018	0.0001	-5.24
51	230	470	0.0	2078.2	1.00	10.00				0.0	-0.0	0.00				
52	210	471	0.0	2078.2	2.00	10.00				0.0	-0.0	0.02				
52	220	472	49.80	4957.8	2.00	10.00	2400.4	2.405	2.04	-5.4	0.0	-0.03	-0.0090	-0.0001	-0.0001	124.78
52	220	473	49.81	4216.4	2.00	10.00	2402.0	2.406	1.73	-5.7	0.4	-0.01	-0.0096	0.0007	-0.000C	-13.31
52	220	474	49.84	3086.0	2.00	10.00	2404.3	2.407	1.26	-6.1	1.1	-0.01	-0.0102	0.0019	-0.000C	-5.34
52	220	475	49.84	2555.9	2.00	10.00	2404.3	2.407	1.04	-7.7	1.6	-0.03	-0.0128	0.0026	-0.0001	-4.92
52	220	476	49.82	5357.5	2.00	10.00	2402.8	2.406	2.22	-5.2	-0.4	-0.03	-0.0087	-0.0007	-0.0001	12.32
52	230	477	0.0	2078.2	2.00	10.00				0.0	-0.0	0.02				
53	210	478	0.0	2078.2	-1.00	10.00				0.0	-0.0	0.02				
53	220	479	49.80	4957.8	-1.00	10.00	2400.4	2.405	2.04	-3.6	0.5	-0.03	-0.0060	0.0009	-0.000C	-6.84
53	220	480	49.81	3086.0	-1.00	10.00	2401.2	2.405	1.26	-4.5	1.5	0.04	-0.0075	0.0025	0.0001	-2.95
53	220	481	49.81	3086.0	-1.00	10.00	2402.0	2.406	1.26	-4.5	1.7	0.06	-0.0075	0.0028	0.0002	-2.70
53	220	482	49.84	2223.6	-1.00	10.00	2404.3	2.407	0.90	-4.8	1.9	0.04	-0.0081	0.0032	0.0001	-2.49
53	220	483	49.81	1327.4	-1.00	10.00	2401.2	2.405	0.53	-4.5	2.2	0.04	-0.0075	C.0037	0.0001	-2.01
53	220	484	49.83	845.5	-1.00	10.00	2403.6	2.406	0.33	-2.7	2.0	0.02	-0.0045	0.0033	0.0001	-1.35
53	220	485	49.80	591.8	-1.00	10.00	2400.4	2.405	C.22	-2.0	2.6	0.02	-0.0033	C.0043	0.0001	-0.77
53	220	486	45.79	3030.2	-1.00	10.00	2399.7	2.405	1.24	-4.5	1.6	0.02	-0.0075	C.0027	0.0001	-2.78
53	230	487	0.0	2078.2	-1.00	10.00				0.0	-0.0	0.02				
54	210	488	0.0	2078.2	-4.00	10.00				0.2	0.0	0.05				

GALCIT Report
HSWT-1131

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.20000 DEG F RHC= 1.93596 SLUG/CUFT
PV= 54.46078 PSF NU= 0.10353E-C4 SQFT/SEC
WM= 62.22174 LBS/CUFT WP= 845.47192 LES/CUFT
LC= 0.50000 FT A= 0.25000 SQFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	PN 10 E 4	SIGMA	LIFT L, LBS	CRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
54	220	499	49.85	4557.8	-4.00	10.00	2405.1	2.407	2.04	-1.6	0.9	-0.07	-0.0027	0.0015	-0.0002	-1.79
54	220	490	49.81	3086.0	-4.00	10.00	2401.2	2.405	1.26	-2.3	1.7	-0.05	-0.0039	0.0028	-0.0002	-1.37
54	220	491	55.83	2595.8	-4.00	10.00	2403.6	2.406	1.06	-2.3	1.9	0.02	-0.0035	0.0032	0.0001	-1.20
54	220	492	49.78	2240.5	-4.00	10.00	2356.9	2.404	0.91	-2.7	1.9	-0.03	-0.0045	0.0032	-0.0001	-1.38
54	220	493	49.85	1327.4	-4.00	10.00	2405.1	2.407	0.53	-2.7	2.4	-0.01	-0.0045	0.0040	-0.0000	-1.11
54	220	494	49.85	1245.6	-4.00	10.00	2405.9	2.408	0.50	-2.5	2.4	-0.03	-0.0042	0.0040	-0.0001	-1.04
54	220	495	49.82	872.5	-4.00	10.00	2402.8	2.406	0.34	-0.9	1.9	-0.03	-0.0015	0.0032	-0.0001	-0.47
54	220	496	49.81	2882.2	-4.00	10.00	2401.2	2.405	1.18	-2.3	1.8	-0.05	-0.0039	0.0029	-0.0002	-1.33
54	220	497	49.81	3717.5	-4.00	10.00	2402.0	2.406	1.53	-1.8	1.6	-0.05	-0.0030	0.0026	-0.0002	-1.15
54	230	498	0.0	2076.2	-4.00	10.00				0.0	0.0	0.02				
55	210	499	0.0	2072.3	0.0	0.0				0.0	0.0	0.04				
55	220	500	49.80	5672.3	0.0	0.0	2400.4	2.405	2.34	1.6	-0.6	-0.09	0.0027	-0.0010	-0.0002	-2.81
55	220	501	49.80	5312.1	0.0	0.0	2400.4	2.405	2.15	1.6	-0.4	-0.09	0.0027	-0.0006	-0.0003	-4.20
55	220	502	49.80	4551.9	0.0	0.0	2400.4	2.405	2.04	1.6	-0.1	-0.09	0.0027	-0.0002	-0.0002	-10.99
55	220	503	53.79	4591.8	0.0	0.0	2395.7	2.405	1.85	1.3	0.1	-0.07	0.0021	0.0002	-0.0002	9.03
55	220	504	49.79	4232.4	0.0	0.0	2399.7	2.405	1.74	1.3	0.4	-0.07	0.0018	0.0011	-0.0002	2.96
55	220	505	49.79	3872.3	0.0	0.0	2399.7	2.405	1.59	1.1	0.7	-0.07	0.0015	0.0015	-0.0002	1.63
55	220	506	49.79	3512.1	0.0	0.0	2395.7	2.405	1.44	0.9	0.9	-0.07	0.0015	0.0015	-0.0002	1.00
55	220	507	49.81	3086.0	0.0	0.0	2401.2	2.405	1.26	0.7	1.2	-0.05	0.0012	0.0020	-0.0002	0.58
55	220	508	49.81	2223.6	0.0	0.0	2401.2	2.405	0.90	0.2	1.7	-0.05	0.0003	0.0028	-0.0002	0.11
55	220	509	49.81	1327.4	0.0	0.0	2401.2	2.405	0.53	0.0	1.5	-0.05	0.0	0.0032	-0.0002	0.0
55	220	510	49.81	845.5	0.0	0.0	2401.2	2.405	0.33	-0.4	1.8	-0.03	-0.0006	0.0031	-0.0001	-0.19
55	220	511	49.81	591.8	0.0	0.0	2401.2	2.405	0.22	-0.4	1.7	-0.00	-0.0006	0.0028	-0.0000	-0.22
55	230	512	0.0	2072.3	0.0	0.0				-0.2	0.0	-0.00				
56	210	513	0.0	2075.0	0.0	0.0				0.0	0.0	0.02				
56	220	514	49.82	4558.7	0.0	5.00	2402.8	2.406	2.04	-2.2	0.5	-0.00	-0.0036	0.0009	-0.0000	-4.12
56	220	515	49.81	3086.0	0.0	5.00	2401.2	2.405	1.26	-2.9	1.4	0.04	-0.0048	0.0023	0.0001	-2.03
56	220	516	49.78	2223.6	0.0	5.00	2395.9	2.404	0.90	-3.2	1.7	0.04	-0.0054	0.0029	0.0001	-1.89
56	220	517	49.80	1327.4	0.0	5.00	2400.4	2.405	0.53	-3.6	1.9	0.04	-0.0060	0.0032	0.0001	-1.84
56	220	518	49.92	845.5	0.0	5.00	2402.8	2.406	0.33	-2.3	1.9	0.04	-0.0039	0.0032	0.0001	-1.20
56	220	519	49.80	591.8	0.0	5.00	2400.4	2.405	0.22	-1.4	1.9	0.02	-0.0024	0.0031	0.0001	-0.78
56	220	520	49.81	1664.7	0.0	5.00	2402.0	2.406	0.67	-3.4	1.5	0.04	-0.0057	0.0031	0.0001	-1.84
56	230	521	0.0	2075.0	0.0	5.00				-0.2	0.0	0.02				
57	210	522	0.0	2075.0	2.00	5.00				0.0	-0.0	0.02				
57	220	523	49.83	4558.7	2.00	5.00	2403.6	2.406	2.04	-3.8	0.1	0.02	-0.0063	0.0002	0.0001	-38.18
57	220	524	49.81	3086.0	2.00	5.00	2401.2	2.405	1.26	-4.3	1.1	0.04	-0.0072	0.0018	0.0001	-3.93
57	220	525	49.84	2223.6	2.00	5.00	2402.3	2.407	0.90	-4.7	1.4	0.04	-0.0078	0.0024	0.0001	-3.27
57	220	526	49.83	1327.4	2.00	5.00	2403.6	2.406	0.53	-4.7	1.9	0.04	-0.0078	0.0032	0.0001	-2.40
57	220	527	49.84	845.5	2.00	5.00	2404.3	2.407	0.33	-2.5	1.8	0.02	-0.0042	0.0030	0.0001	-1.32

THREE COMPONENT

RUA DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.20000 DEG F PHC= 1.93596 SLCC/CUFT
PV= 54.46078 PSF NU= 0.10353E-04 SCFT/SEC
WM= 62.22174 LBS/CUFT WM= 845.47192 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRFSSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	FN 10 E 6	SIGMA	LIFT L, LBS	DPRG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/U
57	220	528	49.85	591.8	2.00	5.00	2405.1	2.407	0.22	-1.8	2.5	0.02	-0.0030	0.0042	0.0001	-0.71
57	220	529	49.82	3518.0	2.00	5.00	2402.8	2.406	1.44	-4.1	1.0	0.02	-0.0069	0.0016	0.0001	-4.34
57	230	530	0.0	2075.0	2.00	5.00				0.2	0.0	0.02				
58	210	531	0.0	2075.0	3.00	5.00				0.2	0.0	0.02				
58	220	532	49.79	4950.7	3.00	5.00	2359.7	2.405	2.04	-4.3	-0.1	0.02	-0.0072	-0.0002	0.0001	31.27
58	220	533	49.82	3534.8	3.00	5.00	2402.8	2.406	1.61	-4.7	0.5	0.02	-0.0078	0.0008	0.0001	-9.75
58	220	534	49.85	3086.0	3.00	5.00	2405.9	2.408	1.26	-5.0	0.9	0.04	-0.0084	0.0015	0.0001	-5.55
58	220	535	49.82	2391.8	3.00	5.00	2402.8	2.406	0.57	-5.7	1.2	0.04	-0.0066	0.0020	0.0001	-4.82
58	220	536	49.85	4558.7	3.00	5.00	2405.9	2.408	2.04	-4.3	-0.1	-0.00	-0.0072	-0.0002	-0.0000	31.14
58	230	537	0.0	2075.0	3.00	5.00				0.2	0.0	0.02				
59	210	538	0.0	2079.0	1.00	5.00				0.2	0.0	0.02				
59	220	539	49.80	4555.3	1.00	5.00	2400.4	2.405	2.04	-3.2	0.2	-0.03	-0.0054	0.0003	-0.0001	-16.84
59	220	540	49.83	3086.0	1.00	5.00	2403.6	2.406	1.26	-3.8	1.2	0.02	-0.0063	0.0020	0.0001	-3.17
59	220	541	49.85	2223.6	1.00	5.00	2406.7	2.408	0.50	-4.3	1.5	0.04	-0.0072	0.0025	0.0001	-2.83
59	220	542	49.85	1327.4	1.00	5.00	2405.1	2.407	0.53	-4.8	1.2	0.04	-0.0081	0.0032	0.0001	-2.55
59	220	543	49.85	1327.4	1.00	5.00	2405.1	2.407	0.53	-4.7	1.5	0.04	-0.0078	0.0032	0.0001	-2.45
59	220	544	49.83	845.5	1.00	5.00	2403.6	2.406	0.33	-2.5	1.7	0.04	-0.0042	0.0028	0.0001	-1.51
59	220	545	49.85	591.8	1.00	5.00	2405.9	2.408	0.22	-2.2	2.1	0.02	-0.0036	0.0036	0.0001	-1.01
59	220	546	49.87	1538.8	1.00	5.00	2407.4	2.408	0.62	-4.7	1.8	0.04	-0.0078	0.0029	0.0001	-2.65
59	230	547	0.0	2075.6	1.00	5.00				0.2	-0.0	0.02				
59	210	548	0.0	2075.6	-1.00	5.00				0.2	-0.0	0.02				
60	220	549	49.84	4555.3	-1.00	5.00	2404.3	2.407	2.04	-1.4	0.9	-0.03	-0.0024	0.0015	-0.0001	-1.59
60	220	550	49.82	3086.0	-1.00	5.00	2402.8	2.406	1.26	-2.3	1.5	0.02	-0.0039	0.0025	0.0001	-1.59
60	220	551	49.85	2223.6	-1.00	5.00	2405.9	2.408	0.90	-2.7	1.8	0.04	-0.0045	0.0030	0.0001	-1.49
60	220	552	49.87	1327.4	-1.00	5.00	2407.4	2.408	0.56	-3.1	2.0	0.04	-0.0051	0.0034	0.0001	-1.49
60	220	553	49.85	1327.4	-1.00	5.00	2405.1	2.407	0.53	-3.1	2.0	0.04	-0.0051	0.0034	0.0001	-1.49
60	220	554	49.86	845.5	-1.00	5.00	2406.7	2.408	0.33	-2.5	2.1	0.02	-0.0042	0.0035	0.0001	-1.20
60	220	555	49.83	591.8	-1.00	5.00	2403.6	2.406	0.22	-1.3	1.8	-0.00	-0.0021	0.0029	-0.0000	-0.72
60	220	556	49.85	1515.1	-1.00	5.00	2405.1	2.407	0.61	-2.9	1.9	0.02	-0.0048	0.0032	0.0001	-1.48
60	230	557	0.0	2075.6	-1.00	5.00				0.2	-0.0	0.02				
61	210	558	0.0	2075.6	-2.00	5.00				0.2	0.0	0.02				
61	220	559	49.87	4955.3	-2.00	5.00	2407.4	2.408	2.04	-0.7	0.8	-0.05	-0.0012	0.0013	-0.0002	-0.89
61	220	560	49.85	3086.0	-2.00	5.00	2405.9	2.408	1.26	-1.3	1.6	-0.00	-0.0021	0.0027	-0.0000	-0.78
61	220	561	49.84	2223.6	-2.00	5.00	2404.3	2.407	0.90	-1.6	1.9	0.02	-0.0027	0.0032	0.0001	-0.85
61	220	562	49.81	1327.4	-2.00	5.00	2401.2	2.405	0.53	-2.2	2.1	0.02	-0.0036	0.0035	0.0001	-1.03
61	220	563	49.83	1211.6	-2.00	5.00	2403.6	2.406	0.48	-2.2	2.1	0.02	-0.0036	0.0035	0.0001	-1.03
61	220	564	49.87	845.5	-2.00	5.00	2407.4	2.408	0.33	-2.2	2.2	0.02	-0.0036	0.0037	0.0001	-0.97
61	220	565	49.85	810.0	-2.00	5.00	2405.9	2.408	0.31	-2.0	2.2	0.02	-0.0033	0.0036	0.0001	-0.90
61	220	566	49.82	591.8	-2.00	5.00	2402.8	2.406	0.22	-0.7	1.9	-0.00	-0.0012	0.0032	-0.0000	-0.38

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TFAP= 71.20000 DEG F RHO= 1.93596 SLUG/CUFT
PV= 54.46078 PSF MU= 0.103535-C4 SCFT/SEC
WM= 62.22174 LBS/CUFT WA= 845.47192 LBS/CUFT
LC= 0.50000 FT A= C.25000 SOFT

RUN	CON	CAPO	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	RA IO E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
61	220	567	49.86	914.8	-2.00	5.00	2406.7	2.408	0.36	-2.2	2.2	0.02	-0.0036	0.0036	0.0001	-0.99
61	220	568	49.85	1450.8	-2.00	5.00	2405.1	2.407	0.59	-2.2	2.0	-0.01	-0.0036	0.0034	-0.0000	-1.06
61	230	569	0.0	2075.6	-2.00	5.00				0.0	-0.0	0.02				
62	210	570	0.0	2075.6	-3.00	5.00				0.0	-0.0	0.02				
62	220	571	49.87	4555.3	-3.00	5.00	2407.4	2.408	2.04	0.4	0.5	-0.05	0.0006	0.0009	-0.0002	0.09
62	220	572	49.85	3086.0	-3.00	5.00	2405.9	2.408	1.26	-0.5	1.5	-0.03	-0.0009	0.0025	-0.0001	-0.36
62	220	573	49.86	2223.6	-3.00	5.00	2404.3	2.407	0.90	-0.5	1.9	-0.00	-0.0015	0.0032	-0.0000	-0.47
62	220	574	49.85	1573.4	-3.00	5.00	2405.1	2.407	0.63	-1.1	2.1	-0.00	-0.0018	0.0035	-0.0000	-0.52
62	220	575	49.85	1327.4	-3.00	5.00	2405.9	2.408	0.53	-1.3	2.2	-0.00	-0.0021	0.0036	-0.0000	-0.53
62	220	576	49.80	1230.2	-3.00	5.00	2400.4	2.405	0.45	-1.4	2.1	-0.00	-0.0024	0.0036	-0.0000	-0.67
62	220	577	49.81	845.5	-3.00	5.00	2402.0	2.406	0.33	-1.3	2.2	-0.00	-0.0021	0.0036	-0.0000	-0.58
62	220	578	49.85	591.8	-3.00	5.00	2405.1	2.407	0.22	-0.5	2.9	-0.00	-0.0009	0.0048	-0.0000	-0.19
62	220	579	49.89	1372.2	-3.00	5.00	2405.0	2.409	0.55	-1.3	2.1	-0.00	-0.0021	0.0035	-0.0000	-0.60
62	220	580	49.86	3522.1	-3.00	5.00	2406.7	2.408	1.61	0.0	0.9	-0.07	0.0	0.0015	-0.0002	0.0
62	230	581	0.0	2075.6	-3.00	5.00				0.0	0.0	0.02				
63	210	582	0.0	2075.6	-4.00	5.00				0.0	0.0	0.0				
63	220	583	49.85	4555.3	-4.00	5.00	2405.9	2.408	2.04	1.1	0.1	-0.07	0.0018	0.0002	-0.0002	11.74
63	220	584	49.86	3086.0	-4.00	5.00	2406.7	2.408	1.26	0.2	1.3	-0.02	0.0003	0.0021	-0.0001	0.14
63	220	585	49.85	2205.9	-4.00	5.00	2405.9	2.408	1.19	0.2	1.3	-0.02	0.0003	0.0022	-0.0001	0.14
63	220	586	49.87	2223.6	-4.00	5.00	2407.4	2.408	0.90	-0.2	1.7	-0.00	-0.0003	0.0028	-0.0000	-0.11
63	220	587	49.81	1327.4	-4.00	5.00	2402.0	2.406	0.53	-0.5	1.9	-0.00	-0.0009	0.0032	-0.0000	-0.23
63	220	588	49.86	1172.7	-4.00	5.00	2406.7	2.408	0.46	-0.4	1.9	-0.00	-0.0006	0.0032	-0.0000	-0.19
63	220	589	49.85	1315.6	-4.00	5.00	2405.1	2.407	0.52	-0.5	1.9	-0.00	-0.0009	0.0032	-0.0000	-0.23
63	220	590	49.85	5646.4	-4.00	5.00	2405.1	2.407	2.32	1.3	-0.3	-0.07	0.0021	-0.0006	-0.0002	-3.74
63	230	591	0.0	2075.6	-4.00	5.00				0.0	-0.0	0.02				

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.79999 DEG F RMC= 1.93584 SLUG/CUFT
PV= 55.58355 PSF NU= 0.10272E-04 SCFT/SEC
MW= 62.21789 LBS/CUFT WM= 845.41772 LRS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CO PSF	RN 10 E 6	SIGMA	LIFT L, LBS	CPAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
64	210	592	G.C	2063.7	0.0	2.50	2405.7	2.426	2.03	0.2	0.0	0.02	-0.0018	0.0011	-0.0000	-1.62
64	220	593	45.85	4943.2	0.0	2.50	2405.7	2.426	1.26	-1.1	0.7	-0.00	-0.0030	0.0022	0.0001	-1.35
64	220	594	45.83	3085.8	0.0	2.50	2405.7	2.426	1.26	-1.1	0.7	0.04	-0.0036	0.0027	0.0001	-1.33
64	220	595	49.85	2223.4	0.0	2.50	2405.7	2.427	0.90	-2.2	1.6	0.04	-0.0042	0.0031	0.0001	-1.35
64	220	596	49.82	1327.3	0.0	2.50	2405.7	2.425	0.53	-2.5	1.9	0.04	-0.0045	0.0032	0.0001	-1.42
64	220	597	49.84	1121.9	0.0	2.50	2405.7	2.426	0.44	-2.7	1.5	0.04	-0.0039	0.0034	0.0001	-1.14
64	220	598	49.81	645.4	0.0	2.50	2405.7	2.424	0.33	-2.3	2.0	0.04	-0.0021	0.0029	0.0001	-0.72
64	220	599	49.82	591.8	0.0	2.50	2405.7	2.425	0.22	-1.3	1.8	0.04	-0.0042	0.0032	0.0001	-1.32
64	220	600	49.81	1246.1	0.0	2.50	2405.7	2.424	0.50	-2.5	1.9	0.04	-0.0033	0.0027	0.0001	-1.94
64	230	601	0.0	2063.7	0.0	2.50	2405.7	2.426	0.2	0.2	0.0	0.02	-0.0033	0.0027	0.0001	-1.94
65	210	602	0.0	2063.7	1.00	2.50	2405.7	2.425	2.03	0.2	0.0	0.02	-0.0045	0.0021	0.0001	-2.10
65	220	603	49.81	4943.2	1.00	2.50	2405.7	2.426	1.26	-2.7	1.3	0.04	-0.0051	0.0026	0.0001	-1.95
65	220	604	49.84	3085.8	1.00	2.50	2405.7	2.427	0.90	-3.1	1.6	0.04	-0.0057	0.0030	0.0001	-1.89
65	220	605	49.85	2223.4	1.00	2.50	2405.7	2.426	0.53	-3.4	1.8	0.04	-0.0042	0.0032	0.0001	-1.32
65	220	606	49.83	1327.3	1.00	2.50	2405.7	2.424	0.33	-2.5	1.9	0.04	-0.0027	0.0029	0.0001	-0.85
65	220	607	49.81	845.4	1.00	2.50	2405.7	2.426	0.22	-1.6	1.9	0.04	-0.0057	0.0029	0.0001	-1.94
65	220	608	49.84	591.8	1.00	2.50	2405.7	2.426	0.59	-3.4	1.8	0.04	-0.0048	0.0022	0.0001	-19.84
65	220	609	49.85	1471.0	1.00	2.50	2405.7	2.427	0.59	0.2	0.0	0.02	-0.0057	0.0029	0.0001	-1.94
65	230	610	0.0	2063.7	1.00	2.50	2405.7	2.426	0.2	0.2	0.0	0.02	-0.0048	0.0022	0.0001	-19.84
66	210	611	0.0	2063.7	2.00	2.50	2405.7	2.425	2.03	-2.5	0.1	-0.00	-0.0057	0.0017	0.0001	-3.26
66	220	612	49.82	4943.2	2.00	2.50	2405.7	2.426	1.26	-3.4	1.0	0.04	-0.0066	0.0023	0.0001	-2.86
66	220	613	49.81	3085.8	2.00	2.50	2405.7	2.426	0.90	-4.0	1.4	0.04	-0.0072	0.0028	0.0001	-2.52
66	220	614	49.85	2223.4	2.00	2.50	2405.7	2.426	0.53	-4.3	1.7	0.06	-0.0057	0.0032	0.0001	-1.75
66	220	615	49.85	1327.3	2.00	2.50	2405.7	2.426	0.40	-3.4	1.9	0.04	-0.0063	0.0021	0.0001	-2.94
66	220	616	49.86	1014.5	2.00	2.50	2405.7	2.427	0.40	-3.8	1.3	0.04	-0.0063	0.0021	0.0001	-2.94
66	220	617	49.85	2497.4	2.00	2.50	2405.7	2.426	1.02	-3.8	1.3	0.04	-0.0063	0.0021	0.0001	-2.94
66	220	618	0.0	2063.7	2.00	2.50	2405.7	2.426	0.2	0.2	0.0	0.02	-0.0063	0.0021	0.0001	-2.94
67	210	619	0.0	2063.7	4.00	2.50	2405.7	2.424	2.34	0.2	0.0	0.02	-0.0063	0.0021	0.0001	-2.94
67	220	620	49.79	5633.4	4.00	2.50	2405.7	2.425	1.86	-3.8	0.0	-0.00	-0.0063	0.0021	0.0001	-2.94
67	220	621	49.81	4532.3	4.00	2.50	2405.7	2.425	1.86	-4.1	-0.2	0.02	-0.0063	0.0021	0.0001	-2.94
67	220	622	49.85	3085.8	4.00	2.50	2405.7	2.426	1.26	-4.8	0.7	0.04	-0.0063	0.0021	0.0001	-2.94
67	220	623	49.83	2291.1	4.00	2.50	2405.7	2.426	0.93	-5.7	1.1	0.02	-0.0063	0.0021	0.0001	-2.94
67	220	624	49.86	5633.4	4.00	2.50	2405.7	2.427	2.33	-3.8	-0.8	-0.00	-0.0063	0.0021	0.0001	-2.94
67	230	625	0.0	2063.7	4.00	2.50	2405.7	2.426	0.2	0.2	0.0	0.02	-0.0063	0.0021	0.0001	-2.94
68	210	626	0.0	2063.7	-2.00	2.50	2405.7	2.425	2.03	0.5	0.4	0.02	-0.0063	0.0021	0.0001	-2.94
68	220	627	49.81	4943.2	-2.00	2.50	2405.7	2.426	1.26	-0.2	1.4	-0.05	-0.0063	0.0021	0.0001	-2.94
68	220	628	49.85	3085.8	-2.00	2.50	2405.7	2.427	0.90	-0.5	1.8	-0.00	-0.0063	0.0021	0.0001	-2.94
68	220	629	49.85	2223.4	-2.00	2.50	2405.7	2.426	0.53	-0.5	1.8	-0.00	-0.0063	0.0021	0.0001	-2.94

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.79999 DEG F QHD= 1.93584 SLUG/CUFT
PV= 55.58395 PSF NU= 0.10272E-04 SCFT/SEC
WM= 62.21788 LBS/CUFT WA= 665.41772 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SQFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QC PSF	PN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
68	220	630	49.83	1327.3	-2.00	2.50	2403.4	2.426	0.53	-0.5	2.0	0.02	-0.0015	0.0034	0.0001	-0.44
68	220	631	49.82	1257.1	-2.00	2.50	2402.6	2.425	0.50	-1.1	2.0	0.02	-0.0018	0.0034	0.0001	-0.53
68	220	632	49.81	555.6	-2.00	2.50	2401.1	2.424	0.33	-1.3	1.9	0.02	-0.0021	0.0032	0.0001	-0.65
68	220	633	49.84	591.8	-2.00	2.50	2404.2	2.426	0.22	-0.5	2.0	0.02	-0.0009	0.0034	0.0001	-0.26
68	220	634	49.82	1007.7	-2.00	2.50	2402.6	2.425	0.40	-1.3	2.0	0.02	-0.0021	0.0033	0.0001	-0.63
68	220	635	49.82	4025.9	-2.00	2.50	2402.6	2.425	1.65	0.0	1.0	-0.05	0.0	0.0017	-0.0002	0.0
69	230	636	0.0	2063.7	-2.00	2.50				0.2	0.0	0.02				
69	210	637	0.0	2055.4	-4.00	2.50				0.2	0.0	0.02				
69	220	638	49.86	4918.9	-4.00	2.50	2406.5	2.427	2.03	1.8	-0.1	-0.07	0.0030	-0.0002	-0.0002	-18.10
69	220	639	49.83	4255.0	-4.00	2.50	2403.4	2.426	1.75	1.6	0.2	-0.07	0.0027	0.0004	-0.0002	0.92
69	220	640	49.85	3055.8	-4.00	2.50	2405.7	2.427	1.26	1.1	0.9	-0.05	0.0018	0.0016	-0.0002	1.14
69	220	641	49.80	2223.4	-4.00	2.50	2400.3	2.424	0.90	0.7	1.3	-0.02	0.0012	0.0021	-0.0001	0.26
69	220	642	49.80	4802.0	-4.00	2.50	2400.3	2.424	1.98	1.8	-0.1	-0.07	0.0030	-0.0002	-0.0002	-12.24
69	230	643	0.0	2055.4	-4.00	2.50				0.0	0.0	0.02				
70	210	644	0.0	2055.4	-5.00	2.50				0.0	0.0	0.02				
70	220	645	49.81	5463.4	-5.00	2.50	2401.8	2.425	2.33	3.0	-1.0	-0.11	0.0051	-0.0017	-0.0004	-3.04
70	220	646	49.85	4938.9	-5.00	2.50	2405.7	2.427	2.03	2.5	-0.6	-0.09	0.0048	-0.0019	-0.0002	-4.51
70	220	647	49.85	3085.8	-5.00	2.50	2405.7	2.427	1.26	2.0	0.4	-0.04	0.0033	0.0007	-0.0001	4.00
70	220	648	49.86	2223.4	-5.00	2.50	2406.5	2.427	0.90	1.8	0.7	-0.02	0.0030	0.0011	-0.0001	2.71
70	230	649	0.0	2055.4	-5.00	2.50				0.2	0.0	0.02				

GALCIT REPORT
HSWT-1131

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.50000 DEG F RHC= 1.93590 SLUG/CUFT
PV= 55.02238 PSF NU= 0.10313E-C4 SCF/SEC
WM= 62.21980 LBS/CUFT WP= 845.44482 LBS/CUFT
LC= 0.50000 FT Z= 0.25000 SQFT

RUN	CN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	CC PSF	PN 10 E 6	SIGMA	LIFT L, LBS	DRAW D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
71	210	650	0.0	2084.0	0.0	-5.00	2395.6	2.414	2.05	-0.2	0.0	-0.00	0.0033	-0.0000	-0.0003	*****
71	220	651	49.79	4063.6	0.0	-5.00	2401.9	2.415	1.26	2.0	-0.0	-0.09	0.0021	0.0017	-0.0002	1.26
71	220	652	49.81	3085.9	0.0	-5.00	2401.9	2.415	1.26	1.3	1.0	-0.05	0.0015	0.0021	-0.0002	0.73
71	220	653	49.80	2223.5	0.0	-5.00	2401.9	2.415	0.50	0.5	1.2	-0.05	0.0009	0.0023	-0.0000	0.39
71	220	654	49.81	1327.3	0.0	-5.00	2401.9	2.415	0.53	0.5	1.4	-0.00	0.0005	0.0024	-0.0000	0.38
71	220	655	49.80	1207.3	0.0	-5.00	2402.4	2.416	0.48	0.5	1.4	-0.00	0.0005	0.0024	-0.0000	0.38
71	220	656	49.83	845.4	0.0	-5.00	2403.5	2.416	0.33	1.3	1.4	0.02	0.0021	0.0024	0.0001	0.33
71	220	657	49.81	591.8	0.0	-5.00	2401.1	2.415	0.22	0.0	1.7	0.02	0.0	0.0028	0.0001	0.0
71	220	658	49.80	2977.7	0.0	-5.00	2406.4	2.414	1.22	1.1	1.1	-0.05	0.0019	0.0019	-0.0002	0.95
71	230	659	0.0	2084.0	0.0	-5.00	2406.4	2.414	1.22	-0.2	0.0	-0.00	0.0024	0.0002	-0.0002	15.74
72	210	660	0.0	2084.0	1.00	-5.00	2406.4	2.416	2.04	-0.2	0.0	-0.00	0.0005	0.0016	-0.0002	0.57
72	220	661	49.84	4963.6	1.00	-5.00	2402.7	2.416	1.26	0.5	0.5	-0.05	0.0006	0.0021	-0.0001	0.28
72	220	662	49.82	3085.9	1.00	-5.00	2402.7	2.416	0.90	0.4	1.3	-0.02	0.0003	0.0024	-0.0000	0.0
72	220	663	49.85	1327.3	1.00	-5.00	2405.0	2.417	0.53	0.0	1.5	-0.00	0.0003	0.0023	-0.0000	-0.13
72	220	664	49.82	845.4	1.00	-5.00	2406.6	2.418	0.25	-0.2	1.4	0.02	-0.0009	0.0023	0.0001	-0.35
72	220	665	49.86	651.1	1.00	-5.00	2406.6	2.418	0.25	-0.5	1.4	0.02	-0.0009	0.0024	0.0001	-0.37
72	220	666	49.85	591.8	1.00	-5.00	2405.0	2.417	0.24	-0.5	1.5	0.02	-0.0009	0.0024	0.0001	-0.37
72	220	667	49.85	591.8	1.00	-5.00	2405.0	2.417	0.24	-0.5	1.5	0.02	-0.0009	0.0024	0.0001	-0.37
72	220	668	49.85	591.8	1.00	-5.00	2405.0	2.417	0.24	-0.5	1.5	0.02	-0.0009	0.0024	0.0001	-0.37
72	220	669	49.85	815.9	1.00	-5.00	2405.0	2.417	0.32	-0.5	1.4	0.02	-0.0009	0.0023	0.0001	-0.39
72	230	670	0.0	2084.0	1.00	-5.00	2405.0	2.417	0.32	-0.2	0.1	-0.00	0.0054	-0.0005	-0.0004	-11.03
73	210	671	0.0	2084.0	-2.00	-5.00	2406.4	2.416	2.04	-0.2	0.1	-0.00	0.0048	0.0003	-0.0004	15.09
73	220	672	49.84	4063.6	-2.00	-5.00	2403.1	2.418	1.66	3.2	-0.3	-0.13	0.0042	0.0011	-0.0002	3.81
73	220	673	49.84	4063.6	-2.00	-5.00	2403.1	2.418	1.66	2.9	0.2	-0.11	0.0039	0.0015	-0.0001	2.63
73	220	674	49.85	3085.9	-2.00	-5.00	2403.5	2.417	1.26	2.5	0.7	-0.07	0.0048	0.0027	0.0000	1.78
73	220	675	49.83	2223.5	-2.00	-5.00	2403.5	2.416	0.90	2.3	0.5	-0.04	0.0048	0.0027	0.0000	1.78
73	220	676	49.81	1327.3	-2.00	-5.00	2401.1	2.415	0.53	2.9	1.6	0.00	0.0054	-0.0014	-0.0004	-3.56
73	220	677	49.80	5683.9	-2.00	-5.00	2406.4	2.414	2.35	3.2	-0.8	-0.13	0.0054	-0.0014	-0.0004	-3.56
73	230	678	0.0	2084.0	-2.00	-5.00	2406.4	2.414	2.35	-0.2	0.0	-0.00	0.0054	-0.0014	-0.0004	-3.56

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.5999 DEG F PHC= 1.93588 SLUG/CUFT
PV= 55.20956 PSF NU= 0.102941-C4 SCFT/SEC
WM= 62.21916 LBS/CUFT WM= 845.43579 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	RN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	MCMENT M, FT-LB	CL	CD	CM	L/D
74	210	679	0.0	2074.7	0.0	0.0	603.4	1.212	0.35	0.2	0.0	0.02	-0.0071	0.0076	0.0006	-0.95
74	220	680	24.97	265.5	0.0	0.0	602.6	1.211	3.25	-1.1	1.1	0.04	-0.0024	0.0041	-0.0035	-0.28
74	220	681	24.95	2074.7	0.0	0.0	1532.2	1.532	0.38	-0.4	0.6	-0.00	-0.0033	0.0042	0.0002	-0.78
74	220	682	39.79	635.8	0.0	0.0	1532.9	1.532	1.32	-1.3	1.6	0.04	-0.0019	0.0033	0.0001	-0.55
74	220	683	35.80	2074.7	0.0	0.0	2358.8	2.417	0.38	-0.7	1.3	0.02	-0.0024	0.0033	0.0001	-0.72
74	220	684	45.78	962.1	0.0	0.0	2400.3	2.418	0.84	-1.4	2.0	0.02	-0.0018	0.0031	0.0001	-0.58
74	220	685	49.80	2074.7	0.0	0.0	3460.3	2.903	0.39	-1.1	1.5	0.02	-0.0021	0.0030	0.0000	-0.73
74	220	686	59.79	1308.2	0.0	0.0	3456.5	2.901	0.58	-1.8	2.6	0.02	-0.0019	0.0030	-0.0000	-0.63
74	220	687	59.75	2074.7	0.0	0.0	0.0	0.0	0.0	-1.6	2.6	-0.01	-0.0019	0.0030	-0.0000	-0.63
74	230	688	C.C	2074.7	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.02	0.0056	-0.0021	-0.0004	-2.71
75	210	689	0.0	2074.7	-4.00	0.0	2285.4	2.359	2.46	3.2	-1.2	-0.11	0.0056	-0.0013	-0.0004	-3.99
75	220	690	48.59	5674.6	-4.00	0.0	2296.3	2.365	2.13	2.9	-0.7	-0.11	0.0037	0.0006	-0.0002	6.50
75	220	691	48.71	4554.3	-4.00	0.0	2306.4	2.370	1.21	2.2	0.3	-0.04	0.0031	0.0010	-0.0001	3.17
75	220	692	48.81	3084.8	-4.00	0.0	2328.1	2.381	0.93	1.8	0.6	-0.02	0.0037	0.0011	-0.0001	3.26
75	220	693	49.04	2223.5	-4.00	0.0	2328.9	2.381	0.71	2.2	0.7	-0.02	0.0037	0.0011	-0.0001	3.26
75	220	694	49.05	1716.6	-4.00	0.0	0.0	0.0	0.0	0.2	0.0	0.02	0.0037	0.0011	-0.0001	3.26
75	230	695	0.0	2074.7	-4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.0037	0.0011	-0.0001	3.26

CONSTANTS: TEMP= 71.29999 DEG F PHC= 1.93584 SLUG/CUFT
PV= 54.64766 PSF NU= 0.10340F-C4 SCFT/SEC
WM= 62.22110 LBS/CUFT WM= 845.46289 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	RN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	MCMENT M, FT-LB	CL	CD	CM	L/D
76	210	696	0.0	2086.6	-2.00	0.0	2405.1	2.410	2.04	0.0	-0.0	-0.02	0.0077	0.0001	-0.0002	37.14
76	220	697	49.85	4566.2	-2.00	0.0	2402.8	2.409	1.26	1.6	0.0	-0.07	0.0015	0.0019	-0.0001	0.79
76	220	698	49.82	3085.9	-2.00	0.0	2405.1	2.410	0.90	0.5	1.1	-0.02	0.0015	0.0019	-0.0001	0.79
76	220	699	45.85	2223.6	-2.00	0.0	2402.8	2.409	0.82	0.5	1.4	-0.00	0.0009	0.0024	-0.0000	0.37
76	220	700	49.82	2035.0	-2.00	0.0	2405.1	2.410	0.53	0.2	1.5	-0.00	0.0003	0.0027	-0.0000	0.11
76	220	701	49.85	1327.4	-2.00	0.0	2405.9	2.411	0.33	0.7	1.6	-0.00	0.0012	0.0027	-0.0000	0.45
76	220	702	49.85	465.5	-2.00	0.0	2403.5	2.410	0.22	0.4	2.6	-0.00	-0.0006	0.0043	-0.0000	-0.14
76	220	703	49.83	591.8	-2.00	0.0	2405.1	2.410	1.88	1.3	0.4	-0.04	0.0021	0.0006	-0.0001	3.33
76	220	704	49.85	4566.3	-2.00	0.0	0.0	0.0	0.0	0.0	-0.0	-0.02	0.0021	0.0006	-0.0001	3.33
76	230	705	0.0	2086.6	-2.00	0.0	0.0	0.0	0.0	0.0	-0.0	-0.02	0.0021	0.0006	-0.0001	3.33

THREE COMPONENT

PUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.29999 DEG F
PV= 54.64756 PSF
WM= 62.22110 LBS/CUFT
LC= 0.50000 FT

PIC= 1.93594 SLLG/CUFT
MU= 0.10340E-04 SCTY/SEC
WM= 845.46285 LBS/CUFT
A= 0.25000 SCTY

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	PN 10 E 6	SIGMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
77	210	706	0.0	2086.6	-1.00	0.0	2402.8	2.409	2.04	0.0	0.0	-0.02	0.0018	0.0004	-0.0001	4.59
77	220	707	49.82	4966.2	-1.00	0.0	2402.6	2.411	1.26	1.1	0.2	-0.04	0.0003	0.0020	-0.0001	0.15
77	270	709	49.86	3085.6	-1.00	0.0	2405.1	2.410	0.90	-0.2	1.2	-0.02	-0.0003	0.0026	-0.0000	-0.11
77	220	709	49.85	2223.6	-1.00	0.0	2402.0	2.409	0.53	-0.5	1.6	-0.00	-0.0005	0.0030	-0.0000	-0.30
77	220	710	49.81	1327.4	-1.00	0.0	2403.5	2.410	0.33	-0.7	1.8	-0.00	-0.0012	0.0029	-0.0000	-0.41
77	220	711	49.83	845.5	-1.00	0.0	2406.6	2.411	0.25	-0.7	1.6	0.02	-0.0012	0.0027	0.0001	-0.45
77	220	712	49.86	745.1	-1.00	0.0	2407.4	2.412	0.22	-0.4	1.8	0.02	-0.0006	0.0029	0.0001	-0.20
77	220	713	49.87	591.8	-1.00	0.0	2407.4	2.412	0.22	-0.5	1.8	-0.00	-0.0009	0.0029	-0.0000	-0.31
77	220	714	49.87	591.8	-1.00	0.0	2407.4	2.412	0.22	0.0	0.0	-0.02	-0.0009	0.0029	-0.0000	-0.31
77	230	715	0.0	2086.6	-1.00	0.0	2401.2	2.408	2.05	0.0	0.0	-0.02	0.0006	0.0009	-0.0001	0.76
78	210	716	0.0	2086.6	0.0	0.0	2405.1	2.410	1.26	-0.4	1.4	-0.00	-0.0006	0.0023	-0.0000	-0.26
78	220	717	49.81	4966.2	0.0	0.0	2407.4	2.412	0.50	-0.5	1.7	0.02	-0.0015	0.0028	0.0001	-0.53
78	220	718	49.85	3085.9	0.0	0.0	2404.3	2.410	0.53	-1.3	1.9	0.02	-0.0021	0.0032	0.0001	-0.66
78	220	719	49.87	2223.6	0.0	0.0	2405.5	2.411	0.33	-1.6	1.8	0.02	-0.0027	0.0030	0.0001	-0.50
78	220	720	49.84	1327.4	0.0	0.0	2402.8	2.409	0.22	-1.3	1.5	0.02	-0.0021	0.0031	0.0001	-0.68
78	220	721	49.85	845.5	0.0	0.0	2402.8	2.409	0.22	0.0	0.0	-0.02	-0.0009	0.0012	-0.0001	-0.76
78	220	722	49.82	591.8	0.0	0.0	2402.8	2.409	0.22	0.0	0.0	-0.02	-0.0009	0.0012	-0.0001	-0.76
78	230	723	0.0	2086.6	0.0	0.0	2402.8	2.409	0.22	0.0	0.0	-0.02	-0.0009	0.0012	-0.0001	-0.76
79	210	724	0.0	2086.6	1.00	0.0	2402.8	2.409	0.22	0.0	0.0	-0.02	-0.0009	0.0012	-0.0001	-0.76
79	220	725	49.85	4966.2	1.00	0.0	2402.8	2.409	1.26	-1.3	1.4	0.02	-0.0021	0.0023	0.0001	-0.51
79	220	726	49.82	3085.9	1.00	0.0	2405.1	2.410	0.50	-1.6	1.6	0.02	-0.0027	0.0027	0.0001	-1.00
79	220	727	49.85	2223.6	1.00	0.0	2403.5	2.410	0.53	-2.0	1.8	0.04	-0.0033	0.0029	0.0001	-1.12
79	220	728	49.84	1327.4	1.00	0.0	2404.3	2.410	0.33	-2.2	1.9	0.04	-0.0036	0.0032	0.0001	-1.11
79	220	729	49.84	845.5	1.00	0.0	2408.2	2.412	0.22	-1.4	1.8	0.02	-0.0024	0.0029	0.0001	-0.82
79	220	730	49.83	591.8	1.00	0.0	2405.1	2.410	0.22	-2.2	1.8	0.04	-0.0036	0.0029	0.0001	-1.23
79	220	731	49.85	1239.4	1.00	0.0	2402.8	2.409	0.22	0.0	0.0	-0.02	-0.0009	0.0012	-0.0001	-0.76
79	230	732	0.0	2086.6	1.00	0.0	2402.8	2.409	0.22	0.0	0.0	-0.02	-0.0009	0.0012	-0.0001	-0.76
80	210	733	0.0	2086.6	2.00	0.0	2402.8	2.409	2.04	0.0	0.0	-0.02	-0.0009	0.0012	-0.0001	-0.76
80	220	734	49.81	4966.2	2.00	0.0	2405.1	2.410	1.26	-1.4	0.3	-0.00	-0.0024	0.0005	-0.0000	-5.03
80	220	735	49.85	3085.9	2.00	0.0	2403.5	2.410	0.90	-2.2	1.2	0.02	-0.0036	0.0020	0.0001	-1.81
80	220	736	49.83	2223.6	2.00	0.0	2402.0	2.409	0.53	-2.7	1.5	0.04	-0.0045	0.0025	0.0001	-1.77
80	220	737	49.85	1327.4	2.00	0.0	2406.6	2.411	0.53	-2.5	1.7	0.04	-0.0048	0.0028	0.0001	-1.73
80	220	738	49.83	845.5	2.00	0.0	2407.4	2.412	0.33	-2.7	1.8	0.04	-0.0045	0.0030	0.0001	-1.43
80	220	739	49.84	591.8	2.00	0.0	2407.4	2.412	0.33	-1.6	1.7	-0.00	-0.0027	0.0028	-0.0000	-0.95
80	220	740	49.81	1547.9	2.00	0.0	2402.0	2.409	0.79	-2.5	1.5	0.02	-0.0042	0.0025	0.0001	-1.65
80	230	741	0.0	2086.6	2.00	0.0	2402.0	2.409	0.79	0.0	0.0	-0.02	-0.0042	0.0025	0.0001	-1.65
81	210	742	0.0	2086.6	4.00	0.0	2402.0	2.409	0.79	0.0	0.0	-0.02	-0.0042	0.0025	0.0001	-1.65
81	220	743	49.83	4966.2	4.00	0.0	2403.5	2.410	2.04	-2.5	-0.1	-0.00	-0.0048	-0.0002	-0.0000	20.57
81	220	744	49.84	3497.5	4.00	0.0	2403.5	2.410	1.43	-3.6	0.6	0.02	-0.0060	0.0010	0.0001	-5.72

TYPE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 71.28000 DEG F
PV= 54.64756 PSF
WM= 62.22110 LBS/CUFT
LC= 0.50000 FTRHO= 1.93594 SLUG/CUFT
MU= 0.10340E-04 SCFT/SEC
WM= 845.46285 LBS/CUFT
A= 0.25000 SQFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	PN 10 E 6	SIGMA	LIFT L, LBS	DPAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
81	220	745	49.86	3085.6	4.00	0.0	2406.6	2.411	1.26	-3.8	0.8	0.02	-0.0063	0.0013	0.0001	-4.45
81	220	746	49.85	2223.6	4.00	0.0	2405.9	2.411	0.90	-4.1	1.0	0.04	-0.0069	0.0017	0.0001	-3.94
81	220	747	49.86	2026.6	4.00	0.0	2406.6	2.411	0.82	-4.1	1.1	0.04	-0.0069	0.0019	0.0001	-3.61
91	220	748	49.84	4866.5	4.00	0.0	2404.3	2.410	2.02	-3.1	-0.1	-0.00	-0.0051	-0.0002	-0.0000	33.15
81	230	749	0.0	2064.9	4.00	0.0	0.0	0.0	0.0	0.0	0.0	-0.02	0.0	0.0	0.0	0.0
82	210	750	0.0	2084.9	4.00	0.0	0.0	0.0	0.0	0.0	0.0	-0.02	0.0	0.0	0.0	0.0
82	220	751	39.63	4564.6	6.00	0.0	1520.6	1.917	3.23	-2.5	-0.7	-0.05	-0.0066	-0.0017	-0.0002	3.79
92	220	752	31.64	4564.6	8.00	0.0	965.2	1.530	5.07	-1.6	-0.9	-0.07	-0.0067	-0.0037	-0.0006	1.79
82	220	753	31.59	4564.6	10.00	0.0	566.1	1.528	5.08	-2.0	-0.9	-0.07	-0.0068	-0.0037	-0.0006	2.19
92	220	754	32.27	4564.6	12.00	0.0	1008.0	1.560	4.87	-2.3	-0.9	-0.07	-0.0093	-0.0034	-0.0007	2.73
92	230	755	0.0	2084.9	12.00	0.0	0.0	0.0	0.0	-0.2	-0.0	-0.02	0.0	0.0	0.0	0.0

CONSTANTS: TEMP= 71.28000 DEG F
PV= 55.58355 PSF
WM= 62.21780 LBS/CUFT
LC= 0.50000 FTRHO= 1.92584 SLUG/CUFT
MU= 0.10272E-04 SCFT/SEC
WM= 845.41772 LBS/CUFT
A= 0.25000 SQFT

RUN	CCN	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSFA	PITCH DEG	FLAP DEG	QO PSF	PN 10 E 6	SIGMA	LIFT L, LBS	DPAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
93	110	756	0.0	2082.3	0.0	0.0	2397.2	2.422	0.85	0.0	0.0	0.0	0.2359	0.0083	-0.0014	28.75
93	120	757	45.77	2032.3	0.0	0.0	2395.6	2.422	0.39	143.8	5.0	-0.43	0.2437	0.0089	-0.0006	27.35
93	120	758	49.75	580.7	0.0	0.0	2375.3	2.413	0.45	143.8	5.3	-0.18	0.2417	0.0037	-0.0007	27.67
93	120	759	49.58	1126.9	0.0	0.0	4736.9	3.405	0.73	270.7	9.9	-1.63	0.2286	0.0084	-0.0028	27.32
93	120	760	65.96	3522.0	0.0	0.0	4768.0	3.416	0.38	277.7	10.6	-0.82	0.2330	0.0089	-0.0014	26.12
93	120	761	70.19	1865.8	0.0	0.0	4690.3	3.388	0.42	277.5	10.2	-0.82	0.2367	0.0087	-0.0014	26.19
93	120	762	65.61	2045.5	0.0	0.0	6158.0	3.882	0.56	348.5	13.2	-2.13	0.2264	0.0086	-0.0028	26.40
93	120	763	79.76	3522.0	0.0	0.0	6010.4	3.636	0.40	356.5	12.8	-1.03	0.2375	0.0085	-0.0015	27.51
93	120	764	78.80	2455.9	0.0	0.0	6026.0	3.841	0.42	349.9	12.7	-1.34	0.2322	0.0085	-0.0018	27.46
93	120	765	73.90	2600.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0
93	130	766	0.0	2082.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.02	0.0	0.0	0.0	0.0
94	110	767	0.0	2082.3	2.00	0.0	2399.5	2.424	1.26	274.5	6.6	15.60	0.4575	0.0109	0.0520	41.86
94	120	768	49.79	3035.8	2.00	0.0	2355.6	2.422	0.52	286.5	7.4	15.66	0.4750	0.0124	0.0522	38.46
94	120	769	49.75	1297.7	2.00	0.0	2429.8	2.439	0.62	276.2	6.8	16.12	0.4580	0.0111	0.0531	41.20
94	120	770	50.10	1571.6	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

THREE COMPONENT

RUN DATA CORRECTED FOR BALANCE INTERACTIONS

CONSTANTS: TEMP= 72.20000 DEG F PHC= 1.93574 SLUG/CUFT
PV= 56.34142 PSF MU= 0.10219E-C4 SCFT/SEC
W= 62.21466 LBS/CUFT MW= 845.38184 LBS/CUFT
LC= 0.50000 FT A= 0.25000 SCFT

RUN	CON	CARD	VELOCITY VO, FT/SEC	PRESSURE PO, PSF	PITCH DEG	FLIP DEG	CC PSF	PA 10 E 4	SIGMA	LIFT L, LBS	DRAG D, LBS	MOMENT M, FT-LB	CL	CD	CM	L/D
85	210	771	0.0	2074.6	0.0	0.0	0.0	2.436	0.84	0.2	0.0	-0.02	-0.0024	0.0019	0.0001	-1.26
85	220	772	49.79	2074.6	0.0	0.0	2395.4	2.435	0.39	-1.4	1.1	0.02	-0.0030	0.0028	0.0001	-1.09
85	220	773	59.77	580.6	0.0	0.0	2397.5	2.435	0.39	-1.8	1.7	0.02	-0.0030	0.0028	0.0001	-1.09
85	220	774	49.78	580.6	0.0	0.0	2398.6	2.436	0.35	-1.8	1.7	0.02	-0.0030	0.0028	0.0001	-1.09
85	220	775	70.13	3521.9	0.0	0.0	4760.0	3.431	0.73	-2.0	2.0	-0.03	-0.0017	0.0017	-0.0000	-0.93
85	220	776	69.78	1855.8	0.0	0.0	4713.4	3.415	0.38	-2.9	1.3	0.02	-0.0024	0.0015	0.0000	-1.63
85	220	777	70.07	2045.8	0.0	0.0	4752.2	3.429	0.42	-2.5	1.7	0.02	-0.0024	0.0014	0.0000	-0.93
85	220	778	78.09	3521.9	0.0	0.0	5901.5	3.821	0.59	-2.7	2.8	-0.01	-0.0018	0.0015	-0.0000	-1.59
85	220	779	77.57	2455.3	0.0	0.0	5825.4	3.801	0.41	-3.4	1.9	0.02	-0.0023	0.0013	0.0000	-1.59
85	220	780	78.03	2600.4	0.0	0.0	5893.7	3.818	0.43	-3.2	2.0	-0.01	-0.0022	0.0014	-0.0000	-1.62
85	230	781	0.0	2074.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.00	-0.0022	0.0014	-0.0000	-1.62

TABLE III
CAVITATION SURVEY WITH
THREE COMPONENT COEFFICIENTS
CORRECTED FOR FAIRING DISK TARES

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
1	50	0	-4	2/ 12	75/690	2.46	-0.1593	0.0110	-0.1013	-14.48	Y L	1/16 inch behind L. E. Fine line	2-4
"	"	"	"	" / 13	" / 691	2.14	-0.1632	0.0117	-0.1006	-13.95	Y L		
"	"	"	"	" / 14	" / 692	1.31	-0.1725	0.0172	-0.1042	-10.03	Y L	1/2 inch behind L. E.	
"	"	"	"	" / 15	" / 693	0.93	-0.1880	0.0214	-0.1092	- 8.79	Y L	L. E., extends back 1/2 inches	
2	50	0	-2	3/ 18	76/697	2.03	0.0319	0.0073	-0.0512	4.37	N		1-14
"	"	"	"	" / 19	" / 698	1.26	0.0302	0.0069	-0.0508	4.38	N		
"	"	"	"	" / 20	" / 699	0.90	0.0302	0.0269	-0.0517	1.12	N		
"	"	"	"	" / 21	" / 700	0.82	0.0277	0.0244	-0.0520	1.14	Y L	1/16 inch behind L. E. extends back 1/8 inch and covers 1/3 of span. Inception	
"	"	"	"	" / 22	" / 701	0.53	0.0238	0.0090	-0.0551	2.64	Y L	L. E., extends back 1 inch and covers entire span.	1-15
"	"	"	"	" / 23	" / 702	0.33	-0.1194	0.0224	-0.0239	-5.33	Y L	L. E. to T. E.	
"	"	"	"	" / 24	" / 703	0.22	-0.0063	0.0242	-0.0154	-0.26	Y L	L. E., extends back 1-1/2 inches behind T. E.	
"	"	"	"	" / 25	" / 704	1.87	0.0265	0.0075	-0.0518	3.53	Y N	U Midchord Suppressed	1-17

TABLE III (Cont'd.)

Grp No.	V ₀ F ₀	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
3	50	0	-1	4/ 28	77/707	2.03	0.1177	0.0058	-0.0295	20.29	N		
"	"	"	"	" / 29	" / 708	1.26	0.1232	0.0060	-0.0292	20.53	N		
"	"	"	"	" / 30	" / 709	0.90	0.1263	0.0055	-0.0287	22.96	N		
"	"	"	"	" / 31	" / 710	0.53	0.1309	0.0055	-0.0282	23.80	N		
"	"	"	"	" / 32	" / 711	0.33	0.1315	0.0062	-0.0273	21.21	Y	L L. E. near F. P.	
"	"	"	"	" / 33	" / 712	0.29	0.1440	0.0076	-0.0304	18.95	Y	L L. E.	Inception. Two streaks. 1-13
"	"	"	"	" / 34	" / 713	0.22	-0.0051	0.0218	-0.0115	-0.23	Y	U Midback L E., extends back 1/2 inch behind T. E.	1-11 1-12
"	"	"	"	" / 35	" / *	0.68	0.1289	0.0057	-0.0280	22.61	N	Suppressed	
4	50	0	0	5/ 38	78/717	2.04	0.2183	0.0055	-0.0064	39.69	N		
"	"	"	"	" / 39	" / 718	1.26	0.2259	0.0054	-0.0047	41.83	N		
"	"	"	"	" / 40	" / 719	0.90	0.2294	0.0051	-0.0034	44.98	N		
"	"	"	"	" / 41	" / 720	0.53	0.2344	0.0054	-0.0021	43.41	N		
"	"	"	"	" / 42	" / 721	0.33	0.2464	0.0073	-0.0053	33.75	N		
"	"	"	"	" / 43	" / 722	0.22	0.1181	0.0144	-0.0267	8.20	Y	U Midchord at F. P. and tip "V" shaped. L Midchord at F. P. and tip Intermittent streaks.	1-10

* The tare values for $\sigma = 0.68$ were found by interpolation.

TABLE III (Cont'd.)

Grp No.	δ°	α°	Date Run/ Card	Date Run/ Card	σ	C_L	C_D	C_M	L/D	Cavitation Surface	Location and Description	Photo No.
5	50	0.	6/ 46	79/725	2.03	0.3296	0.0063	0.0197	52.32	N		
"	"	"	"/ 47	"/726	1.26	0.3326	0.0059	0.0223	56.37	N		
"	"	"	"/ 48	"/727	0.90	0.3419	0.0060	0.0243	56.98	N		
"	"	"	"/ 49	"/728	0.53	0.3573	0.0068	0.0288	52.54	N		
"	"	"	"/ 50	"/729	0.33	0.3382	0.0139	0.0102	24.33	Y	U Midchord at F. P. and tip "V" shaped. Intermit- tent	1-8
"	"	"	"/ 51	"/730	0.22	0.0991	0.0174	-0.0146	5.70	Y	U 6/10 chord extends back 1 inch behind T. E.	1-9
"	"	"	"/ 52	"/731	0.49	0.3622	0.0067	0.0296	54.06	N	Suppressed	

Grp No.	V F ₂ s	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
											Surface			
6	50	0	2	7/ 55	80/734	2.03	0.4688	0.0088	0.0532	53.27	N			
"	"	"	"	" / 56	" / 735	1.26	0.4693	0.0084	0.0557	55.87	N			
"	"	"	"	" / 57	" / 736	0.90	0.4731	0.0083	0.0574	57.00	N			
"	"	"	"	" / 58	" / 737	0.53	0.4914	0.0088	0.0593	55.84	Y	U L. E.	Streak	1-5
"	"	"	"	" / 59	" / 738	0.33	0.2783	0.0237	0.0102	11.74	Y	U 2/3 of surface		2-3
"	"	"	"	" / 60	" / 739	0.22	0.1490	0.0209	0.0040	7.13	Y	U 2/3 of surface		1-7
"	"	"	"	" / 61	" / 740	0.79	0.4835	0.0080	0.0591	60.44	N	U	Suppressed	
"	"	"	"	10/77	" / 734	2.04	0.4358	0.0078	0.0453	55.87	N			
"	"	"	"	" / 78	" / 735	1.26	0.4455	0.0076	0.0489	58.62	N			
"	"	"	"	" / 79	" / 736	0.90	0.4538	0.0075	0.0510	60.51	N			
"	"	"	"	" / 80	" / 737	0.53	0.4610	0.0073	0.0537	63.15	Y	L. E.	Streak	2-7
"	"	"	"	" / 81	" / 738	0.33	0.1504	0.0198	0.0043	7.60	Y	U 2/3 of surface		

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
6	50	0	2	11/84 80/734	2.05	0.4450	0.0075	0.0476	59.33			
"	"	"	"	" /85 " /735	1.26	0.4532	0.0067	0.0508	67.64			
"	"	"	"	" /86 " /736	0.90	0.4580	0.0065	0.0529	70.46			
"	"	"	"	" /87 " /737	0.53	0.4796	0.0065	0.0583	73.78			
"	"	"	"	" /88 " /738	0.33	0.3437	0.0212	0.0193	16.45			
"	"	"	"	" /89 " /739	0.22	0.1538	0.0204	0.0060	7.54			
"	"	"	"	13/102 " /734	2.06	0.4348	0.0078	0.0460	55.74			
"	"	"	"	" /103 " /735	1.26	0.4469	0.0069	0.0496	64.77			
"	"	"	"	" /104 " /736	0.90	0.4434	0.0067	0.0503	66.18			
"	"	"	"	" /105 " /737	0.53	0.4556	0.0071	0.0534	64.17			
"	"	"	"	" /106 " /738	0.33	0.3108	0.0212	0.0110	14.66			
"	"	"	"	" /107 " /739	0.22	0.1253	0.0200	-0.0014	6.27			
"	"	"	"	" /108 " /737	0.53	0.4567	0.0066	0.0534	69.20			
"	"	"	"	" /109 " /738	0.33	0.3545	0.0196	0.0172	18.09			
"	"	"	"	" /110 " /739	0.22	0.1437	0.0195	0.0023	7.37			

Note: Run 11 is a rerun of Runs 7 and 10.

Note: Run 13 is a rerun of Run 11.

TABLE III (Cont'd.)

Grp No.	V ₀ FPS	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
6	50	0	2	84/76880/735		1.26	0.4540	0.0089	0.0521	51.01	N		
"	"	"	"	" / 769	" / 737	0.52	0.4703	0.0096	0.0524	48.99	Y	Midchord	
"	"	"	"	" / 770	" / *	0.62	0.4535	0.0084	0.0532	53.99	N	Inception Suppressed	

*The face values for $\sigma = 0.62$ were found by interpolation.

TABLE III (Cont'd.)

Grp No.	V_0 Fps	δ	α°	Data Run/ Card	Tare Run/ Card	σ	C_L	C_D	C_M	L/D	Cavitation Surface	Location and Description	Photo No.
8	50	0	4	8/ 64	81/743	2.03	0.6602	0.0155	0.1038	42.59	N		
"	"	"	"	"/ 65	"/744	1.43	0.6640	0.0148	0.1069	44.86	Y	U L. E., extends back ap- proximately 1/4 inch and covers from F.P. to midspan.	1-1
"	"	"	"	"/ 66	"/745	1.26	0.6700	0.0153	0.1096	43.79	Y	U L. E., extends back ap- proximately 1/2 inch and covers 80% of span.	1-3
"	"	"	"	"/ 67	"/746	0.90	0.7298	0.0223	0.1185	32.73	Y	U L. E., extends back 3-1/2 inches	2-2
"	"	"	"	"/ 68	"/748	2.02	0.6646	0.0154	0.1050	43.16	N	Suppressed	

TABLE III (Cont'd.)

Grip No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
10	50	5	-4	21/18263/583		2.04	0.0971	0.0082	-0.0838	11.84	N		
"	"	"	"	" /183 "/584		1.26	0.0978	0.0077	-0.0840	12.70	N		
"	"	"	"	" /184 "/585		1.19	0.0986	0.0075	-0.0849	12.64	Y L	Inception	3-10
"	"	"	"	" /185 "/586		0.90	0.0993	0.0090	-0.0857	11.03	Y L	L.E., extends back 3/8 inch	3-11
"	"	"	"	" /186 "/587		0.53	0.0798	0.0123	-0.0921	6.49	Y L	L.E., extends back 2 inches	3-12
"	"	"	"	" /187 "/588		0.47	0.0571	0.0159	-0.0900	3.59	Y L	L.E., extends back 3 inches	3-13
"	"	"	"	" /188 "/589		0.52	0.0733	0.0130	-0.0934	5.64	Y N	Inception Suppressed	3-14
"	"	"	"	" /189 "/590		2.33	0.0952	0.0082	-0.0848	11.61	N L	Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ FPs	δ°	α°	Date, Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
11	50	5	-3	20/17062/571	2.05	0.1906	0.0075	-0.0610	25.41	N		
"	"	"	"	"/171 "/572	1.26	0.1952	0.0070	-0.0597	27.89	N		
"	"	"	"	"/172 "/573	0.90	0.1989	0.0067	-0.0599	29.69	N		
"	"	"	"	"/173 "/574	0.63	0.2013	0.0065	-0.0590	30.97	Y	L L.E.	3-5
"	"	"	"	"/174 "/575	0.53	0.2011	0.0070	-0.0596	28.73	Y	L L.E., extends back 1/2 inch and covers full span.	3-6
"	"	"	"	"/175 "/576	0.49	0.1981	0.0072	-0.0599	27.51	Y	L L.E., extends back 3/4 inch and covers full span.	3-2
"	"	"	"	"/176 "/577	0.33	0.1622	0.0150	-0.0744	10.81	Y	L L.E., extends back 1/2 chord and covers full span.	3-7
"	"	"	"	"/177 "/578	0.22	-0.0155	0.0273	-0.0190	-0.57	Y	U.H.L. to T.E.	3-3
"	"	"	"	"/178 "/579	0.55	0.1973	0.0071	-0.0609	27.79	Y	L L.E. to T.E.	3-8
"	"	"	"	"/179 "/580	1.61	0.1888	0.0073	-0.0619	25.86	N	U.H.L.	3-4
"	"	"	"	"	"	"	"	"	"	N	Suppressed	
"	"	"	"	"	"	"	"	"	"	N	Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ FPS	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
												Surface		
12	50	5	-2	19/158	1/559	2.04	0.2968	0.0059	-0.0378	50.31		N		
"	"	"	"	"	159	1.26	0.2981	0.0057	-0.0360	52.30		N		
"	"	"	"	"	160	0.90	0.3023	0.0055	-0.0350	54.96		N		
"	"	"	"	"	161	0.53	0.3067	0.0054	-0.0338	56.80		N		
"	"	"	"	"	162	0.48	0.3091	0.0054	-0.0337	57.24		Y	U H.L.	Inception 2-29
"	"	"	"	"	163	0.33	0.2726	0.0117	-0.0475	23.30		Y	U H.L. to T.E.	2-30
"	"	"	"	"	164	0.31	0.2571	0.0124	-0.0481	20.73		Y	L L.E.	Inception 2-27
"	"	"	"	"	165	0.22	0.0105	0.0253	-0.0153	-0.42		Y	U H.L. to T.E.	2-31
"	"	"	"	"	166	0.36	0.3016	0.0107	-0.0455	28.19		Y	L L.E. to T.E.	2-28
"	"	"	"	"	167	0.58	0.3105	0.0048	-0.0337	64.69		N	N L L.E.	Suppressed
"	"	"	"	"	"	"	"	"	"	"		N	U H.L.	Suppressed

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
											Surface			
13	50	5	-1	18/148	60/549	2.04	0.4075	0.0064	-0.0127	63.67	N			
"	"	"	"	"/149	"/550	1.26	0.4104	0.0065	-0.0100	63.14	N			
"	"	"	"	"/150	"/551	0.90	0.4142	0.0061	-0.0086	67.90	N			
"	"	"	"	"/151	"/552	0.56	0.4184	0.0058	-0.0071	72.14	Y	U H. L.	Inception	2-22
"	"	"	"	"/152	"/553	0.53	0.4215	0.0058	-0.0068	72.67	Y	U H. L.	Developed	2-23
"	"	"	"	"/153	"/554	0.33	0.3197	0.0147	-0.0281	21.75	Y	U H. L., extends forward to midchord.	"V" shaped.	2-24
"	"	"	"	"/154	"/555	0.22	-0.0105	0.0222	-0.0121	-0.47	Y	U H. L., extends forward to midchord		2-25
"	"	"	"	"/155	"/556	0.61	0.4224	0.0060	-0.0072	70.40	Y	L U H. L.	Suppressed	2-26

TABLE III (Cont'd.)

Grp No.	V_0 Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C_L	C_D	C_M	L/D	Cavitation Surface	Location and Description	Photo No.
14	50	5	0	14/113	56/514	2.04	0.5075	0.0086	0.0129	59.01	N		
"	"	"	"	"/114	"/515	1.26	0.5140	0.0076	0.0160	67.63	N		
"	"	"	"	"/115	"/516	0.90	0.5218	0.0073	0.0179	71.48	N		
"	"	"	"	"/116	"/517	0.53	0.5248	0.0070	0.0197	74.97	Y	U H. L., extends back 1/8 inch	2-9
"	"	"	"	"/117	"/518	0.33	0.3418	0.0190	-0.0118	17.99	Y	U Midchord	2-10
"	"	"	"	"/118	"/519	0.22	0.1486	0.0191	-0.0251	7.78	Y	U Midchord, extends back 1-1/4 inch behind T. E.	2-11
"	"	"	"	"/119	"/520	0.67	0.5303	0.0065	0.0196	81.58	N	Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
15	50	5	1	17/13859/539		2.04	0.5140	0.0086	0.0134	59.77	N		
"	"	"	"	" /139 "	" /540 "	1.26	0.5172	0.0080	0.0165	64.65	N		
"	"	"	"	" /140 "	" /541 "	0.90	0.5240	0.0078	0.0184	67.18	N		
"	"	"	"	" /141 "	" /542 "	0.54	0.5259	0.0073	0.0202	72.04	Y	Inception U.H.L.	2-20
"	"	"	"	" /142 "	" /543 "	0.53	0.5347	0.0070	0.0205	76.39	Y	Developed U.H.L.	
"	"	"	"	" /143 "	" /544 "	0.33	0.3459	0.0193	-0.0110	17.92	Y	"V" shaped. U.L.E., extends back to H.L.	2-21
"	"	"	"	" /144 "	" /545 "	0.22	0.1366	0.0190	-0.0257	7.19	Y	U Midchord extends back 1-1/2 inches behind T.E.	
"	"	"	"	" /145 "	" /546 "	0.62	0.5377	0.0065	0.0203	82.72	N	Suppressed U.H.L.	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
16	50	5	2	15/122	57/523	2.05	0.7337	0.0147	0.0729	49.91	N		
"	"	"	"	"/123	"/524	1.26	0.7362	0.0133	0.0764	55.35	N		
"	"	"	"	"/124	"/525	0.90	0.7290	0.0187	0.0796	38.98	Y	U L. E. Three streaks.	2-12
"	"	"	"	"/125	"/526	0.53	0.6324	0.0340	0.0339	18.60	Y	U L. E. to T. E. Streaks	2-14
"	"	"	"	"/126	"/527	0.33	0.3793	0.0195	0.0195	12.77	Y	U L. E., extends back 1 inch behind T. E. "V" shaped.	2-15
"	"	"	"	"/127	"/528	0.22	0.2059	0.0239	0.0042	8.62	Y	U L. E., extends back 3 inches behind T. E. "V" shaped.	2-16
"	"	"	"	"/128	"/529	1.44	0.7409	0.0137	0.0766	54.08	N	Suppressed U L. E.	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
17	50	5	3	16/13158/532		2.04	0.8245	0.0192	0.0989	42.94	N		
"	"	"	"	" /132 "	" /533 "	1.62	0.8317	0.0185	0.1017	44.96	Y	Inception. Spotty.	2-17
"	"	"	"	" /133 "	" /534 "	1.26	0.8380	0.0197	0.1070	42.54	Y	U L.E., extends back 1 inch and covers full span.	2-18
"	"	"	"	" /134 "	" /535 "	0.97	0.9377	0.0310	0.1091	30.25	Y	U L.E., extends back 3/4 of chord.	2-19
"	"	"	"	" /135 "	" /536 "	2.04	0.8283	0.0194	0.0996	42.70	Y	U L.E.	
												Two tiny spots.	
18	50	-5	-2	24/21373/672		2.04	-0.2433	0.0115	-0.0695	-21.16	N		
"	"	"	"	" /214 "	" /673 "	1.66	-0.2485	0.0118	-0.0707	-20.06	Y	L E.	Inception
"	"	"	"	" /215 "	" /674 "	1.26	-0.2527	0.0139	-0.0723	-18.18	Y	L E., extends back 3/8 inch.	3-25
"	"	"	"	" /216 "	" /675 "	0.90	-0.2673	0.0169	-0.0783	-15.82	Y	L E., extends back 1-1/2 inches.	3-27
"	"	"	"	" /217 "	" /676 "	0.53	-0.4019	0.0405	-0.0347	-9.92	Y	L E. to T.E.	3-28
"	"	"	"	" /218 "	" /677 "	2.35	-0.2443	0.0113	-0.0702	-21.62	Y	L E.	Row of tiny bubbles. Almost suppressed. (P ₀ limitation)

TABLE III (Cont'd.)

Grp No.	V_0 Fps	θ	α	Data Run/ Card	Tare Run/ Card	σ	C_L	C_D	C_M	L/D	Cavitation Surface		Location and Description	Photo No.
											Cavitation	Surface		
19	50	-5	0	22/19271/651		2.05	-0.0437	0.0072	-0.0206	-6.07	N			
"	"	"	"	"/193	"/652	1.26	-0.0482	0.0075	-0.0207	-6.43	N			
"	"	"	"	"/194	"/653	0.90	-0.0506	0.0077	-0.0211	-6.57	N			
"	"	"	"	"/195	"/654	0.53	-0.0548	0.0082	-0.0214	-6.68	N			
"	"	"	"	"/196	"/655	0.48	-0.0537	0.0084	-0.0213	-6.39	Y	L	L.E. near tip	3-21
"	"	"	"	"/197	"/656	0.33	-0.1086	0.0091	-0.0242	-11.93	Y	L	L.E. to T.E.	3-20
"	"	"	"	"/198	"/657	0.22	-0.0269	0.0174	-0.0017	-1.55	Y	U	Partially covered.	3-18 3-19
"	"	"	"	"/199	"/658	1.21	-0.0483	0.0073	-0.0208	-6.62	Y	L	L.E. to T.E.	
											N		Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Fair Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
											Surface			
20	50	-5	1	23/202	72/661	2.05	0.0326	0.0051	0.0016	6.39	N			
"	"	"	"	"/203	"/662	1.26	0.0332	0.0054	0.0021	6.15	N			
"	"	"	"	"/204	"/663	0.90	0.0332	0.0056	0.0025	5.93	N			
"	"	"	"	"/205	"/664	0.53	0.0352	0.0060	0.0031	5.87	N			
"	"	"	"	"/206	"/665	0.33	0.0371	0.0063	0.0036	5.89	N			
"	"	"	"	"/207	"/666	0.25	0.0482	0.0074	0.0012	6.51	Y	U	Midchord	Inception
"	"	"	"	"/208	"/667	0.22	0.0528	0.0101	-0.0078	5.23	Y	U	Midchord	
											Y	L	H. L.	Inception
"	"	"	"	"/209	"/668	0.24	0.0470	0.0076	0.0008	6.18	N	L	H. L.	Suppressed
"	"	"	"	"/210	"/669	0.31	0.0369	0.0066	0.0036	5.58	N	U		Suppressed

TABLE III (Cont'd.)

Grp No.	V Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
											Surface	Surface		
21	50	2.5	-5	37/326	70/645	2.39	-0.1365	0.0115	-0.1169	-11.87	Y	L	L. E.	5-21
"	"	"	"	"	"/646	2.03	-0.1387	0.0136	-0.1184	-10.20	Y	L	L. E., extends back 1/4 inch and covers span.	5-22
"	"	"	"	"	"/328	1.29	-0.1488	0.0208	-0.1236	-7.15	Y	L	L. E., extends back 1 inch and covers span.	5-23
"	"	"	"	"	"/329	0.93	-0.1750	0.0270	-0.1297	-6.48	Y	L	L. E.	5-24
22	50	2.5	-4	36/319	69/638	2.03	-0.0388	0.0089	-0.0937	-4.36	N			
"	"	"	"	"	"/320	1.74	-0.0402	0.0089	-0.0932	-4.52	Y	L	L. E.	5-18
"	"	"	"	"	"/321	1.26	-0.0405	0.0110	-0.0957	-3.68	Y	L	L. E.	5-19
"	"	"	"	"	"/322	0.90	-0.0474	0.0141	-0.0999	-3.36	Y	L	L. E.	5-20
"	"	"	"	"	"/323	1.97	-0.0430	0.0089	-0.0953	-4.83	N	L	L. E.	

TABLE III (Cont'd.)

G-P No.	V_0 FPS	δ°	α°	Data Run/ Card	σ	C_L	C_D	C_M	L/D	Cavitation		Location and Description	Photo No.
											Surface		
23	50	2.5	-2	35/308/627	2.03	0.1605	0.0068	-0.0457	23.60	N			
"	"	"	"	" / 309	1.26	0.1627	0.0064	-0.0451	25.42	N			
"	"	"	"	" / 310	0.90	0.1667	0.0061	-0.0442	27.33	N			
"	"	"	"	" / 311	0.53	0.1708	0.0061	-0.0436	28.00	N			
"	"	"	"	" / 312	0.50	0.1717	0.0062	-0.0435	27.69	Y	L	Inception	5-15
"	"	"	"	" / 313	0.33	0.1685	0.0075	-0.0476	22.47	Y	L	Inception	5-13 5-16
"	"	"	"	" / 314	0.22	-0.0084	0.0244	-0.0153	-0.34	Y		U 1/2 of surface U L. E. to T. E.	5-14 5-17
"	"	"	"	" / 315	0.39	0.1623	0.0071	-0.0444	22.86	N	U H. L.	Suppressed	
"	"	"	"	" / 316	1.65	0.1520	0.0062	-0.0456	24.52	N	L	Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
											Surface			
24	50	2.5	0	31/276	64/593	2.03	0.3680	0.0058	0.0029	63.45	N			
"	"	"	"	"/277	"/594	1.26	0.3729	0.0055	0.0054	67.80	N			
"	"	"	"	"/278	"/595	0.90	0.3782	0.0054	0.0068	70.04	N			
"	"	"	"	"/279	"/596	0.53	0.3800	0.0053	0.0083	71.70	N			
"	"	"	"	"/280	"/597	0.44	0.3864	0.0056	0.0083	69.00	Y	U Midchord	Inception	5-2
"	"	"	"	"/281	"/598	0.33	0.3235	0.0144	-0.0139	22.47	Y	U Midchord, extends beyond T.E.	Developed	5-3
"	"	"	"	"/282	"/599	0.22	0.1152	0.0170	-0.0282	6.78	Y	U Midchord, extends beyond T.E.	Further developed.	5-4
"	"	"	"	"/283	"/600	0.49	0.3831	0.0052	0.0086	73.67	N	U Midchord	Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
25	50	2.5	1	32/286	65/603	2.03	0.4815	0.0075	0.0300	64.20	N		
"	"	"	"	"	287/604	1.26	0.4852	0.0069	0.0329	70.32	N		
"	"	"	"	"	288/605	0.90	0.4922	0.0066	0.0350	74.58	N		
"	"	"	"	"	289/606	0.53	0.4987	0.0062	0.0373	80.44	Y	U Outboard and slightly forward of midchord.	5-5
"	"	"	"	"	290/607	0.33	0.3467	0.0197	0.0021	17.60	Y	U Forward of midchord covers full span.	5-6
"	"	"	"	"	291/608	0.22	0.1223	0.0187	-0.0135	6.54	Y	U 60% of surface.	5-7
"	"	"	"	"	292/609	0.59	0.5139	0.0066	0.0411	77.86	N	U Suppressed	
26	50	2.5	2	33/295	66/612	2.03	0.6078	0.0103	0.0631	59.01	N		
"	"	"	"	"	296/613	1.26	0.6239	0.0093	0.0676	67.09	N		
"	"	"	"	"	297/614	0.90	0.6227	0.0091	0.0692	68.43	Y	U L.E., extends back 5/16 inch.	5-8
"	"	"	"	"	298/615	0.53	0.6104	0.0247	0.0396	24.71	Y	U L.E., inboard side only.	5-9
"	"	"	"	"	299/617	1.01	0.6260	0.0094	0.0693	66.60	N	U L.E. Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
28	50	7.5	-5	43/382	49/441	2.04	0.1493	0.0006	-0.0982	248.83	N		
"	"	"	"	"	383	1.26	0.1458	0.0058	-0.0985	25.14		Missed	
"	"	"	"	"	384	1.36	0.1473	0.0051	-0.0990	28.88	Y	L. E., covers almost entire span.	6-16
"	"	"	"	"	385	1.26	0.1466	0.0060	-0.0990	24.43	Y		
"	"	"	"	"	386	0.90	0.1454	0.0107	-0.1015	13.59	Y	L. E., extends back 3/4 inch.	
"	"	"	"	"	387	0.73	0.1408	0.0132	-0.1032	10.67	Y		
"	"	"	"	"	388	0.53	0.1201	0.0201	-0.1075	5.98	Y	Inception Developed	
											U.H. L. L. E.		
											L. E., extends back approximately 2 inches.		
											U.H. L., extends back approximately 1 inch.		
											U.H. L.	Suppressed	
				"	389	0.76	0.1388	0.0120	-0.1021	11.57	N		
				"	390	2.34	0.1473	-0.0007	-0.0995	210.43	Y	Tiny spot. Almost suppressed. (P ₀ limitation).	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tarc Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
29	50	7.5	-4	42/373	48/431	2.04	0.2491	0.0007	-0.0753	355.86	N		
"	"	"	"	"	"/374	"/432	0.2483	0.0048	-0.0744	51.73	N		
"	"	"	"	"	"/375	"/433	0.2514	0.0071	-0.0746	35.41	N		
"	"	"	"	"	"/376	"/434	0.2518	0.0078	-0.0743	32.28	Y	Inception	6-12
"	"	"	"	"	"/377	"/435	0.2521	0.0112	-0.0756	22.51	Y	L. E., extends back 1 inch and covers span.	6-13
"	"	"	"	"	"	"	"	Y	"	"	U	H. L., extends back 1 inch and covers span.	6-15
"	"	"	"	"	"/378	"/437	0.2452	0.0057	-0.0748	32.69	N	Suppressed	
"	"	"	"	"	"/379	"/438	0.2452	0.0009	-0.0760	272.44	N	Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ FPs	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
30	50	7.5	-2	41/36174/420		2.04	0.4636	-0.0009	-0.0269	-515.11	N		
"	"	"	"	" / 362 "	" / 421 "	1.26	0.4677	0.0039	-0.0243	119.92	N		
"	"	"	"	" / 363 "	" / 422 "	0.90	0.4671	0.0063	-0.0227	74.14	N		
"	"	"	"	" / 364 "	" / 423 "	0.77	0.4682	0.0070	-0.0222	66.89	Y	Inception	6-5
"	"	"	"	" / 365 "	" / 424 "	0.53	0.4711	0.0111	-0.0245	42.44	Y	U Just behind H. L. U.H. L., extends back 1 inch	6-6
"	"	"	"	" / 366 "	" / 425 "	0.33	0.2802	0.0199	-0.0452	14.08	Y	U.H. L. to T. E.	6-7
"	"	"	"	" / 367 "	" / 426 "	0.29	0.2276	0.0212	-0.0484	10.74	Y	L L. E.	6-8 6-9
"	"	"	"	" / 368 "	" / 427 "	0.22	-0.0092	0.0277	-0.0141	-0.33	Y	L L. E. to T. E.	6-10 6-11
"	"	"	"	" / 369 "	" / 428 "	0.37	0.3312	0.0194	-0.0430	17.07	N L	L. E.	Suppressed
"	"	"	"	" / 370 "	" / *	0.83	0.4665	0.0063	-0.0224	74.05	N	U.H. L.	Suppressed

* The tare values for $\sigma = 0.83$ were found by interpolation.

TABLE III (Cont'd.)

Grp No.	V_0 Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C_L	C_D	C_M	L/D	Cavitation Surface	Location and Description	Photo No.
31	50	7.5	0	38/33441/393		2.05	0.6785	0.0106	0.0258	64.01	N		
"	"	"	"	" / 335	" / 394	1.26	0.6858	0.0091	0.0091	75.36	N		
"	"	"	"	" / 336	" / 395	0.90	0.6983	0.0084	0.0323	83.13	N		
"	"	"	"	" / 337	" / 396	0.79	0.6968	0.0079	0.0328	88.20	Y	Inception	5-25
"	"	"	"	" / 338	" / 397	0.53	0.6746	0.0175	0.0172	38.55	Y	U H.L. U 3/4 of flop	5-26
"	"	"	"	" / 339	" / 398	0.33	0.3529	0.0233	-0.0104	15.15	Y	U Approximately midchord to 1/2 inch behind T. E.	5-27
"	"	"	"	" / 340	" / 399	0.22	0.1801	0.0211	-0.0249	8.54	Y	U Approximately midchord to 2 inches behind T. E.	5-28
"	"	"	"	" / 341	" / 400	0.88	0.6987	0.0082	0.0325	85.21	N	Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	S°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
32	50	7.5	1	39/344	45/403	2.05	0.7616	0.0142	0.0525	53.63	N		
"	"	"	"	"	345/404	1.26	0.8041	0.0128	0.0640	62.82	N		
"	"	"	"	"	346/405	0.90	0.7945	0.0120	0.0654	66.21	N		
"	"	"	"	"	347/*	0.75	0.8093	0.0118	0.0685	63.58	Y	U L. E., extends back to T. E.	5-29
"	"	"	"	"	348/407	0.53	0.7139	0.0257	0.0337	27.78			
"	"	"	"	"	349/408	0.33	0.3721	0.0280	0.0048	13.29	Y	U Midchord to 1 inch behind T. E.	5-30
"	"	"	"	"	350/409	0.22	0.2127	0.0232	-0.0100	9.17	Y	U Midchord to 3 inches behind T. E.	5-31
"	"	"	"	"	351/410	1.12	0.7938	0.0119	0.0611	66.71	Y	U L. E.	5-32

* The tare values for σ = 0.75 were found by interpolation.

TABLE III (Cont'd.)

Grp No.	V F _{ps}	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
				Card	Card						Surface			
33	50	7.5	2	40/35446/413		2.04	0.8635	0.0119	0.0832	72.56	N			
"	"	"	"	" / 355 "	" / 414	1.34	0.8666	0.0144	0.0877	60.18	Y	U L.E.	Inception	6-2
"	"	"	"	" / 356 "	" / 415	1.26	0.8752	0.0153	0.0896	57.20	Y	U L.E., originating at F.P. and covers 2/3 of span		6-3
"	"	"	"	" / 357 "	" / 416	0.90	0.9616	0.0364	0.0753	26.42	Y	U L.E. to T.E.	Very rough.	6-4
"	"	"	"	" / 358 "	" / 417	2.34	0.8588	0.0105	0.0815	81.79	Y	U L.E.	Two tiny spots. Almost suppressed. (P ₀ limitation)	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
											Surface		
34	50	10	-5	30/266 *	2.04	0.2862	0.0087	-0.0905	32.90	N			
"	"	"	"	"/267	1.26	0.2922	0.0082	-0.0990	35.63	N			
"	"	"	"	"/268	1.04	0.2962	0.0078	-0.0834	37.97	Y	U H. L.	Inception	4-16
"	"	"	"	"/269	1.00	0.2993	0.0079	-0.0891	37.89	Y	L L. E.	Inception	4-13
"	"	"	"	"						Y	U H. L.	Developed	4-17
"	"	"	"	"/270	0.90	0.3010	0.0080	-0.0888	37.63	Y	L L. E.	Developed	4-14
"	"	"	"	"/271	0.53	0.0191	-0.0191	-0.1057	14.57	Y	U H. L. to T. E.	Further developed.	4-18
"	"	"	"	"/272	1.22	0.2913	0.0081	-0.0897	35.96	N	U H. L.	Suppressed	4-15
"	"	"	"	"/273	2.03	0.2818	0.0085	-0.0904	33.15	N	L L. E.	Suppressed	4-19

* There was no Tare Run for $\sigma = 10^\circ$, $\alpha = -5^\circ$ and $V_0 = 50$ ft/sec made for HSWT-1131.
 All of the Tare values used, except for $\sigma = 1.26$ and $\sigma = 1.22$, are from a plot dated 3/22/79 and work sheet dated 3/22/79.
 The tare values used for $\sigma = 1.26$ and $\sigma = 1.22$ are from the Tare run for Group 34 in HSWT-1127.

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
											Surface			
35	50	10	-4	29/25654/489		2.04	0.3937	0.0081	-0.0657	48.60	N			
"	"	"	"	" / 257 "	490	1.26	0.3974	0.0074	-0.0641	53.70	N			
"	"	"	"	" / 258 "	491	1.05	0.4021	0.0072	-0.0633	55.85	Y	U H.L.	Inception	4-9
"	"	"	"	" / 259 "	492	0.90	0.4061	0.0078	-0.0634	52.06	Y	U H.L.	Developed	4-10
"	"	"	"	" / 260 "	493	0.53	0.3768	0.0162	-0.0762	23.26	Y	U H.L. to T.E.		
"	"	"	"	" / 261 "	494	0.50	0.3426	0.0172	-0.0784	19.92	Y	L L.E. U H.L. to T.E.	Inception	4-11
"	"	"	"	" / 262 "	496	1.18	0.4035	0.0071	-0.0639	56.83	N	U H.L.	Suppressed	
"	"	"	"	" / 263 "	497	1.53	0.3987	0.0071	-0.0649	56.15	N/L	L.E.	Suppressed	4-12

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
37	50	10	-1	28/24653/479		2.05	0.7158	0.0118	0.0110	60.66	N		
"	"	"	"	" /247 "	480	1.26	0.7461	0.0099	0.0156	75.36	N		
"	"	"	"	" /248 "	*	1.14	0.7400	0.0094	0.0161	78.72	Y	Inception	4-4
"	"	"	"	" /249 "	482	0.90	0.7454	0.0097	0.0170	76.85	Y	H. L., extends back 3/8 inch	4-5
"	"	"	"	" /250 "	483	0.53	0.6431	0.0214	-0.0034	30.05	Y	H. L. to T. E.	4-6
"	"	"	"	" /251 "	484	0.33	0.3545	0.0234	-0.0235	15.15	Y	Begins forward of H. L., extends back 1 inch behind T. E.	4-7
"	"	"	"	" /252 "	485	0.22	0.1679	0.0217	-0.0396	7.74	Y	Begins forward of H. L., extends back 3 inches behind T. E.	
"	"	"	"	" /253 "	486	1.24	0.7359	0.0093	-0.0156	79.13	N	Suppressed	

TABLE III (Cont'd.)

GFP No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
35	50	10	0	25/22150/452		2.04	0.8304	0.0143	0.0377	58.07	N		
"	"	"	"	" / 222 "	453	1.26	0.8444	0.0120	0.0422	70.37	N		
"	"	"	"	" / 223 "	454	1.19	0.8527	0.0117	0.0430	72.88	Y	Inception	3-30
"	"	"	"	" / 224 "	455	0.90	0.8540	0.0120	0.0441	71.17	Y	U Just behind H. L., extends back 5/16 inch.	3-31
"	"	"	"	" / 225 "	456	0.53	0.7174	0.0264	0.0174	27.17	Y	U H. L. to T. E.	3-32
"	"	"	"	" / 226 "	457	0.33	0.3967	0.0278	-0.0070	14.27	Y	U Forward of H. L., extends back 1 inch behind T. E.	3-33
"	"	"	"	" / 227 "	458	0.22	0.2165	0.0236	-0.0234	9.17	Y	U Forward of H. L., extends back 3 inches behind T. E.	4-21
"	"	"	"	" / 228 "	453	1.25	0.8503	0.0118	0.0431	72.06	N	Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
											Surface			
39	50	10	1	26/231	51/462	2.04	0.8877	0.0188	0.0628	47.22	N			
"	"	"	"	" / 232	" / 463	1.26	0.8872	0.0166	0.0668	53.45	N			
"	"	"	"	" / 233	" / 464	0.95	0.8932	0.0159	0.0701	56.18	Y	U.H. L. U.L. E.	Inception Three large streaks.	4-23
"	"	"	"	" / 234	" / 465	0.90	1.0247	0.0258	0.0670	39.72	Y	U.L. E. to T. E.		4-24
"	"	"	"	" / 235	" / 467	1.09	0.9020	0.0170	0.0748	53.06	Y	U.L. E.	Inception	4-22
"	"	"	"	" / 236	" / 468	1.16	0.9044	0.0173	0.0745	52.28	N	H. L.	Suppressed	
"	"	"	"	" / 237	" / 469	1.41	0.9015	0.0182	0.0724	49.53	N	U.L. E.	Suppressed	
40	50	10	2	27/240	52/472	2.05	0.9762	0.0246	0.0936	39.68	N			
"	"	"	"	" / 241	" / 473	1.74	0.9715	0.0240	0.0949	40.48	Y	L. E.	Inception	4-2
"	"	"	"	" / 242	" / 474	1.26	0.0572	0.0263	0.1133	40.20	Y	L. E., extends back 1/3 of chord		4-3
"	"	"	"	" / 243	" / 476	2.23	0.9783	0.0254	0.0933	38.52	N	L. E.	Suppressed	

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation		Location and Description	Photo No.
											Surface			
44	25	0	0	1 / 2	74/680	0.35	0.2369	0.0075	0.0001	31.59	Y		Midchord	
"	"	"	"	" / 3	"/681	3.31	0.2352	0.0070	-0.0005	33.60	N			
"	40	"	"	" / 4	"/682	0.38	0.2461	0.0061	0.0012	40.34	Y		Midchord	Inception
"	"	"	"	" / 5	"/683	1.31	0.2366	0.0058	-0.0008	40.79	N			
"	50	"	"	" / 6	"/684	0.38	0.2449	0.0059	0.0007	41.50	Y		Midchord	
"	"	"	"	" / 7	"/685	0.84	0.2378	0.0047	-0.0012	50.60	N			
"	60	"	"	" / 8	"/686	0.39	0.2442	0.0045	0.0000	54.27	Y		Midchord	Intermittent
"	"	"	"	" / 9	"/687	0.58	0.2379	0.0053	-0.0010	44.89	N			

TABLE III (Cont'd.)

Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
44	25	0	0	12/ 9274/680		0.35	0.2321	0.0052	0.0016	44.63			
"	"	"	"	" / 93 "/681		3.31	0.2364	0.0054	-0.0020	43.78			
"	40	"	"	" / 94 "/682		0.38	0.2399	0.0055	0.0008	43.62			
"	"	"	"	" / 95 "/683		1.30	0.2373	0.0050	-0.0014	47.46			
"	50	"	"	" / 96 "/684		0.37	0.2439	0.0055	0	44.35			
"	"	"	"	" / 97 "/685		0.84	0.2411	0.0049	-0.0011	49.20			
"	60	"	"	" / 98 "/686		0.39	0.2411	0.0051	-0.0004	47.27			
"	"	"	"	" / 99 "/687		0.58	0.2355	0.0049	-0.0013	48.06			

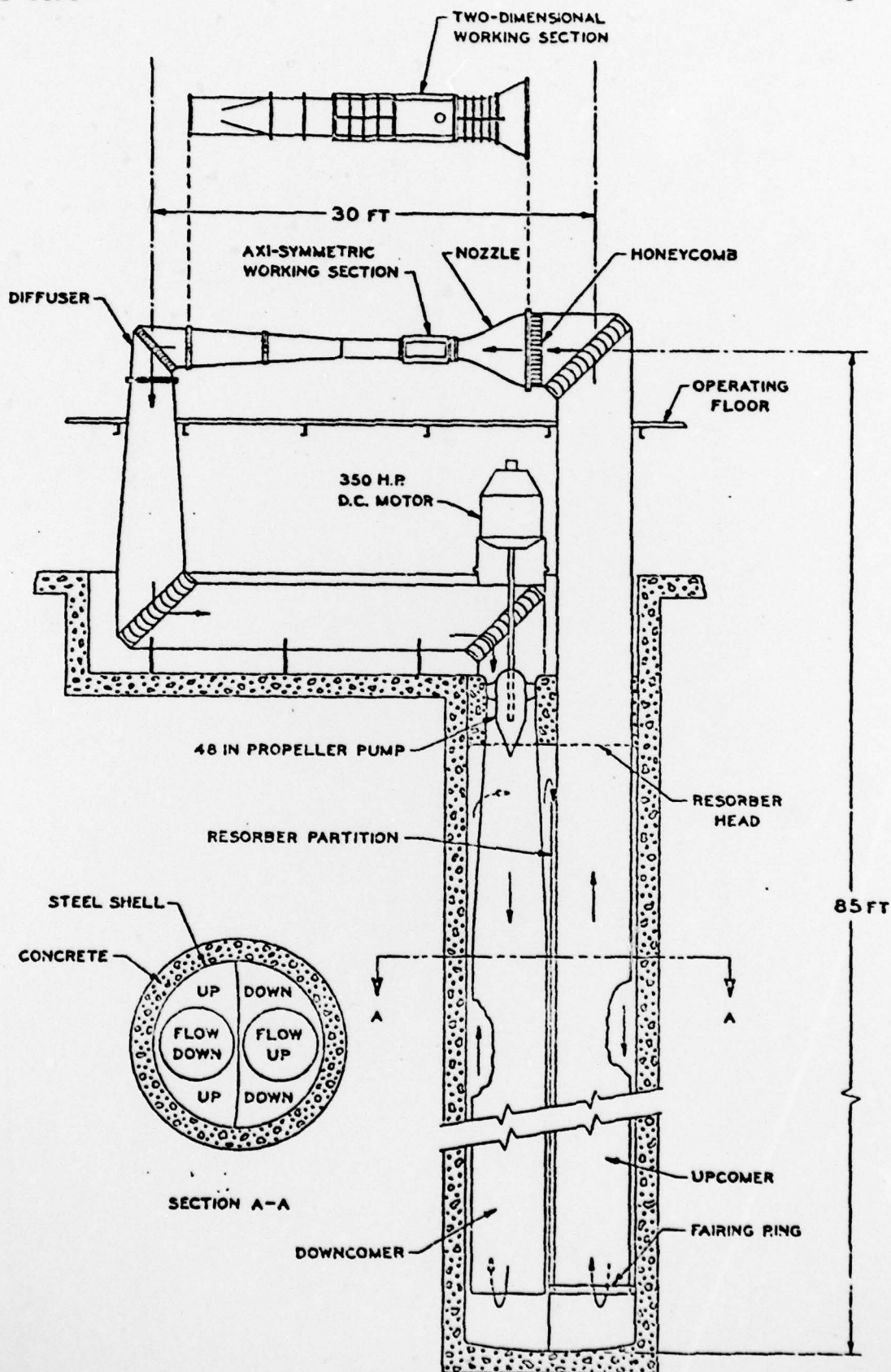
Note: Run 12 is a rerun of Run 1.

TABLE III (Cont'd.)

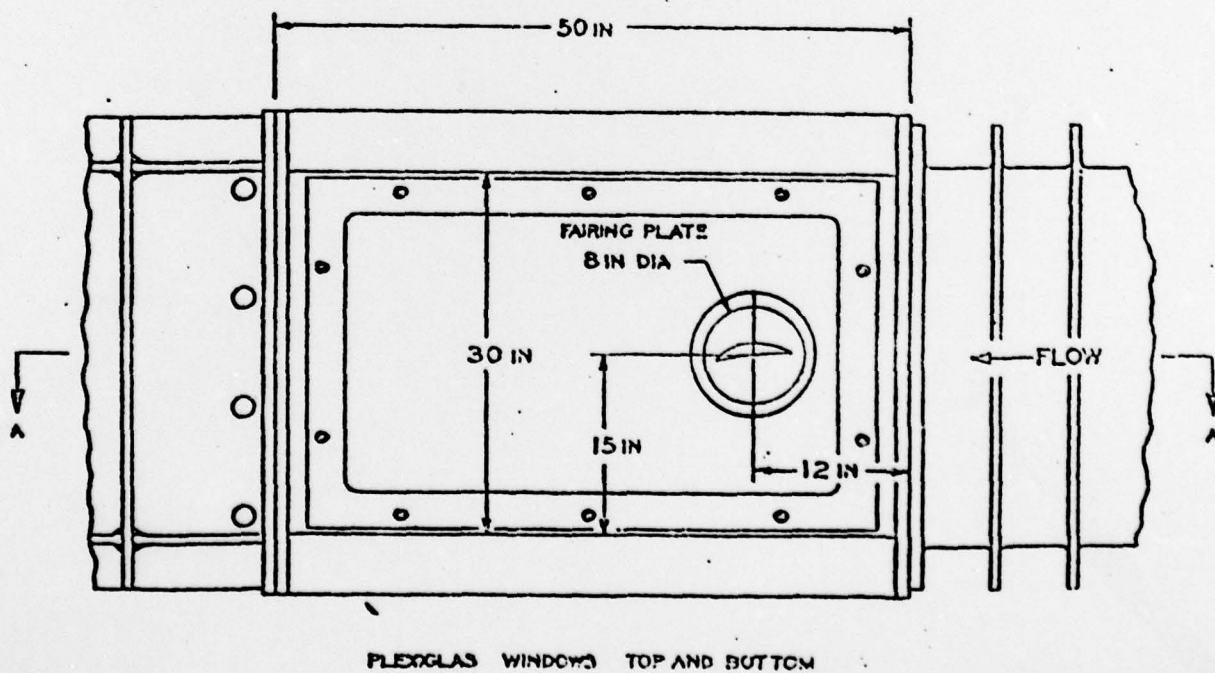
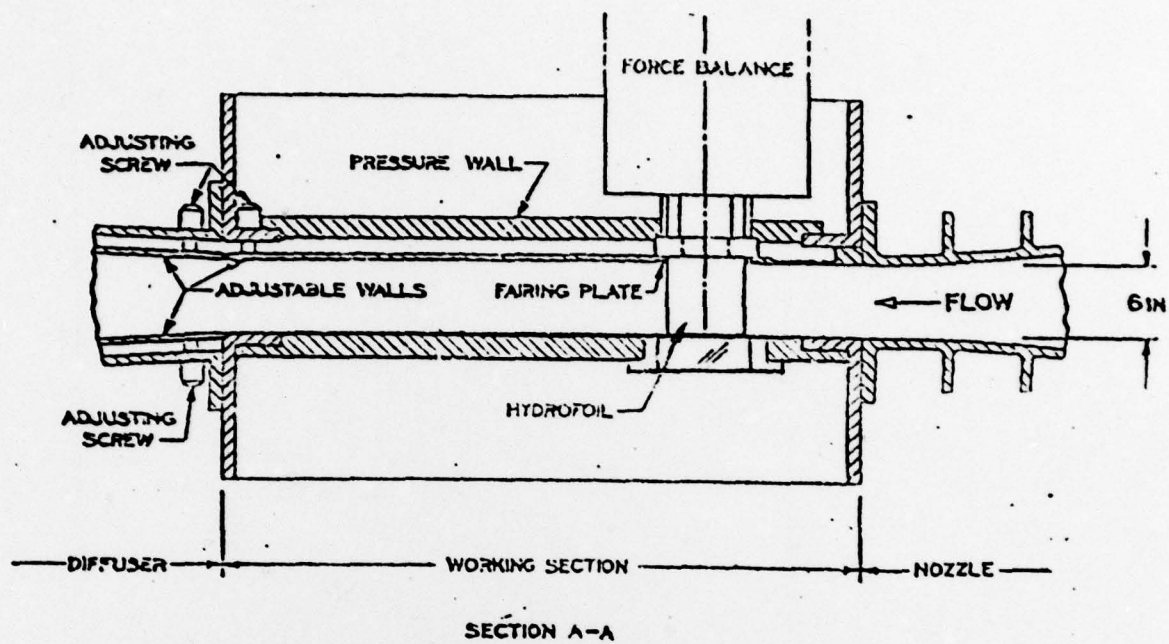
Grp No.	V ₀ Fps	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C_L	C_D	C_M	L/D	Cavitation		Location and Description	Photo No.
												Surface		
44	50	0	0	83/75785/772		0.85	0.2375	0.0064	-0.0013	37.11	N			
"	"	"	"	"/758	"/773	0.39	0.2407	0.0061	-0.0005	39.46	Y	U	Outboard slightly behind midchord.	Inception
"	"	"	"	"/759	"/774	0.45	0.2387	0.0059	-0.0006	40.46	N	U	Midchord	Suppressed
"	70	"	"	"/760	"/775	0.73	0.2269	0.0067	-0.0028	33.87	N			
"	"	"	"	"/761	"/776	0.38	0.2306	0.0074	-0.0014	31.16	Y	U	Inboard slightly behind midchord.	Inception
"	"	"	"	"/762	"/777	0.42	0.2343	0.0073	-0.0014	32.10	N	U	Midchord	Suppressed
"	80	"	"	"/763	"/778	0.56	0.2246	0.0067	-0.0028	33.52	N			
"	"	"	"	"/764	"/779	0.40	0.2353	0.0072	-0.0015	32.68	Y	U	Inboard slightly behind midchord.	Inception
"	"	"	"	"/765	"/780	0.42	0.2301	0.0071	-0.0018	32.41	N	U	Midchord	Suppressed

TABLE III (Cont'd.)

Grp No.	V ₀ FPs	δ°	α°	Data Run/ Card	Tare Run/ Card	σ	C _L	C _D	C _M	L/D	Cavitation Surface	Location and Description	Photo No.
48	50	2.5	4	34/302	67/630	2.33	0.7974	0.0193	0.1138	41.32	N		
"	"	"	"	" / 303	" / 621	1.86	0.7939	0.0189	0.1153	42.01	Y	U L. E., extends back about 1/4 inch and covers 2/3 of span.	5-10
"	"	"	"	" / 304	" / 622	1.26	0.8207	0.0219	0.1270	37.47	Y	U L. E., extends back 1-1/4 inches and covers entire span.	5-11
"	"	"	"	" / 305	" / 624	2.33	0.7930	0.0194	0.1143	40.88		L. E. Three tiny spots. Almost suppressed. (P ₀ limitation)	5-12
49	40	0	6	9/ 7182	751	3.21	0.8607	0.0233	0.1541	36.94	Y	U L. E. near F. P.	
"	32	"	8	" / 72	" / 752	5.02	1.0188	0.0333	0.1967	30.59	Y	U L. E. near F. P.	
"	"	"	10	" / 73	" / 753	5.04	1.1053	0.0811	0.2309	13.63	Y	U L. E. near F. P.	
"	"	"	12	" / 74	" / 754	4.83	1.1403	0.1436	0.2336	7.94	Y	U L. E. extends back 3/4 inch.	



High Speed Water Tunnel Circuit Schematic



Two-Dimensional Working Section Schematic

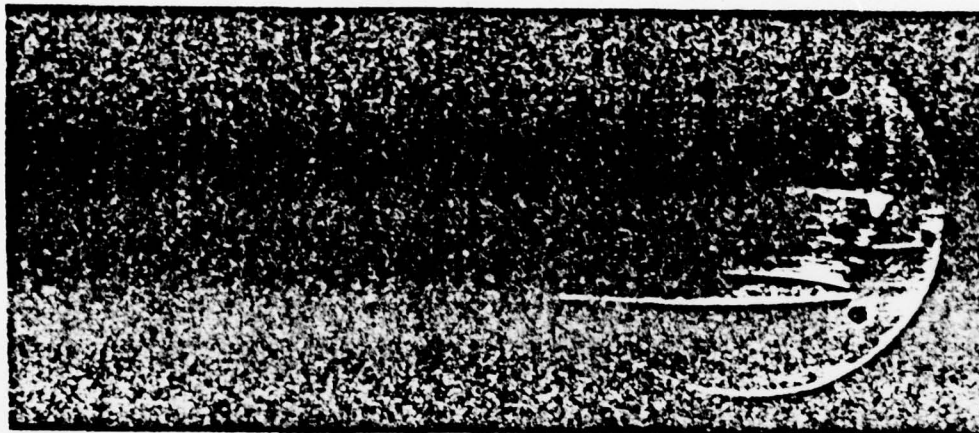


Photo 2-17

$\delta = 0^\circ$, $\alpha = 3^\circ$, $\sigma = 1.62$



Photo 2-18

$\delta = 0^\circ$, $\alpha = 3^\circ$, $\sigma = 1.26$



Photo 2-19

$\delta = 0^\circ$, $\alpha = 3^\circ$, $\sigma = 0.97$



Photo 2-27

$\delta = 50^\circ$, $\alpha = -2^\circ$, $\sigma = 0.31$ Bottom View

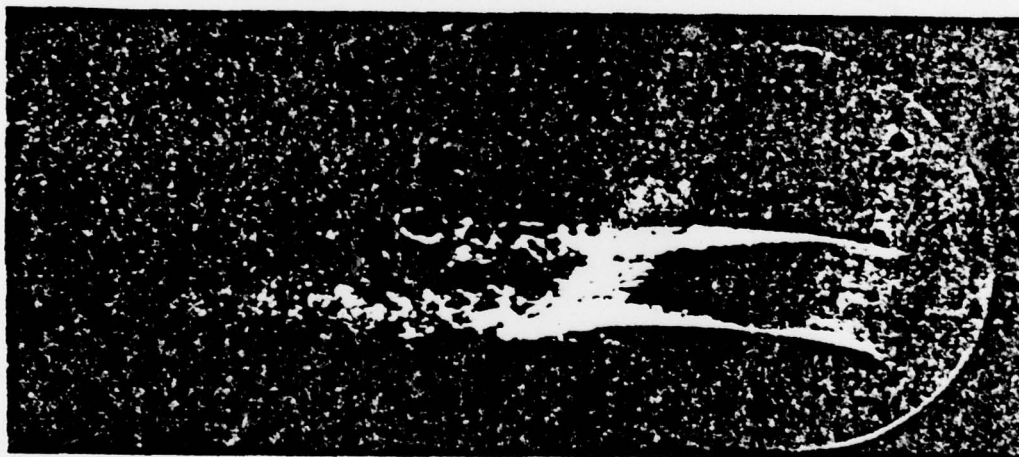


Photo 2-31

$\delta = 50^\circ$, $\alpha = -20^\circ$, $\sigma = 0.31$ Top View

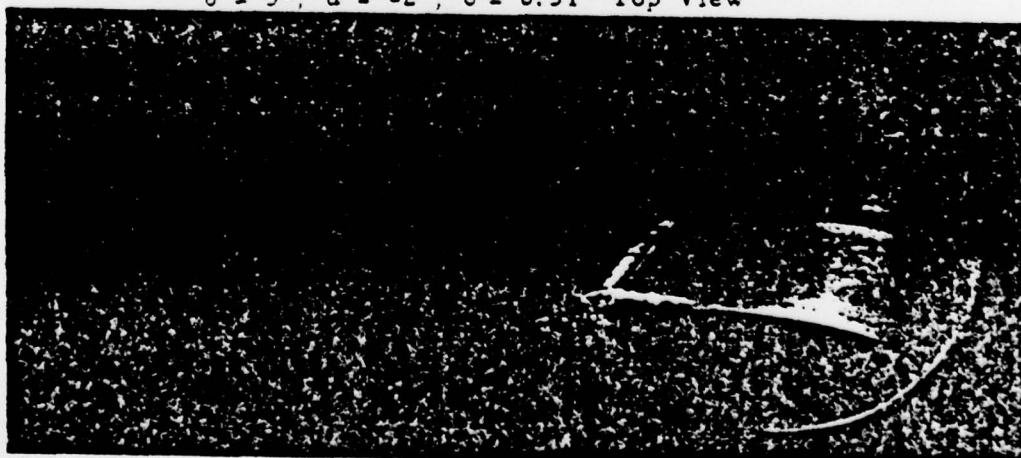


Photo 2-29

$\delta = 50^\circ$, $\alpha = -20^\circ$, $\sigma = 0.48$